MASS.
DOCS.
COLL.

UMASS/AMHERST
312066 0278 0804 3

Presented by

Wm D. Landay

FORTY-FIRST ANNUAL REPORT

OF THE

BOARD OF EDUCATION:

TOGETHER WITH THE

FORTY-FIRST ANNUAL REPORT

OF THE

SECRETARY OF THE BOARD.

1876-77.

JANUARY, 1878.

BOSTON:
ALBERT J. WRIGHT, STATE PRINTER,
79 MILK STREET (CORNER OF FEDERAL).
1878.

CONTENTS.

I.—REPORT OF BOARD OF EDUCATION, ... 3–9

II.—REPORTS OF VISITORS OF THE NORMAL SCHOOLS, ... 11–46
  1. At Framingham, ... 13
  2. At Westfield, ... 16
  3. At Bridgewater, ... 20
  4. At Salem, ... 25
  5. At Worcester, ... 29
  6. At Boston, Normal Art-School, ... 39

III.—REPORT OF THE SECRETARY OF THE BOARD, ... 47–102

IV.—REPORTS OF AGENTS OF THE BOARD, ... 103–121
  1. Report of George A. Walton, Agent, ... 104
  2. Report of E. A. Hubbard, Agent, ... 112
  3. Report of John Kneeland, Agent, ... 118

V.—REPORT OF THE TREASURER OF THE BOARD, ... 123

VI.—APPENDIX TO REPORT OF THE SECRETARY, ... 131
  A. Course of Studies adopted by the Hampshire East Association of School Committees, ... 133
  B. Address of Hon. P. Emory Washburn, ... 152
  C. The Worcester Free Institute, ... 173
  D. The Manual Element in Education, ... 185
  E. Industrial School Association, ... 219

VII.—ABSTRACT OF SCHOOL RETURNS, ... ii
  Returns of Evening Schools, ... lx
  of Schools in State Institutions, ... lxi
  Graduated Tables (First Series), ... lxii
  (Second Series), ... xcii
  (Third Series), ... cv

VIII.—INDEX, ... cxvii

ANNUAL REPORT

OF THE

BOARD OF EDUCATION.

ANNUAL REPORT.

In compliance with the requirements of the Statutes of the Commonwealth, the Board of Education respectfully submit to the Legislature their Forty-first Annual Report.

It may be well not to confine this report to the review of a single year, but, looking back over a number of years, to refer to what the Board has done or attempted to do, to the importance of its work, and to its present condition.

The State Normal Schools from the first have been under the especial supervision of the Board. In 1870 there were four Normal Schools, with 719 pupils, pursuing a regular course of studies. There are now, including the Normal Art-School, six of these schools, with 1,067 pupils. The standard of scholarship requisite for admission and for graduation has been steadily raised. The aim now is to admit to the Normal Schools those only who give evidence of ability to make earnest and successful students, and to graduate those only who appear to be thoroughly trained and efficient teachers. An advanced course of instruction has been added to the former two years' course, for the purpose of preparing those who desire it to teach in the High Schools. Drawing has been added to the regular course of study in all these schools.

The schools are now quite well supplied with laboratories, with chemical and philosophical apparatus, with cabinets, and with libraries filled with text-books and books of reference. A new Normal School has been established at Worcester, to relieve the other schools, and to meet the increasing demand for normal instruction. The school-houses at Westfield, Salem, and Bridgewater have been greatly enlarged, and boarding-houses built at Bridgewater, Framingham, and Westfield. The report prepared for the Centennial, shows that two of these schools, in which full statistics have been kept, have graduated 2,221 thoroughly trained female teachers, and these graduates have taught an average of seven and one-third years. When it is considered that a large majority of these young ladies do not engage in teaching as a life-work, the average length of time they have taught is greater than would be expected.

Until recently drawing was taught in but few of the public schools, and in these few without method and to little purpose; it is now one of the regular studies to be taught in all the schools of the State. At the suggestion of the Board, the Normal Art-School was established at Boston, and an efficient corps of teachers appointed for the various branches of free-hand, mechanical, and architectural drawing, designing, and moulding. Annual examinations have been held, and the public interest in the work has been expressed by the attendance of thousands upon the exhibitions of accepted drawings. Other States have followed our example, and at no distant day the country will experience the results of a trained eye and a skilled hand in every business of life.

The establishment of technical schools has been frequently urged by the Board. An act was prepared and submitted to the Legislature, which provided that every city and town of 10,000 inhabitants should establish a technical school. The act was amended by substituting "may" for "shall," and the statute stands a dead-letter. If technical schools had been established as proposed, opportunities would be offered to young men who desire to obtain a theoretical and practical education in every branch of mechanics and engineering. Many would be attracted to these schools, and labor would be dignified, and our factories and workshops would be filled with skilled artizans.

Within the last eight years, the supervision of the schools for the deaf has been transferred from the Board of State Charities to the Board of Education, and now the education of the deaf is put upon the same basis as that of other children. The Clarke Institute at Northampton now numbers 66 pupils, with devoted, earnest teachers; and though the closed ear cannot be opened, the mute lip has been taught to speak, and the eye trained to read the spoken word, while the mind is developed by the same studies pursued by more favored children. Massachusetts was the first to establish schools for the deaf children, and to open these schools to the little ones at five years of age, and to make ample provision for their instruction for a period of ten years. In addition to the Clarke Institute at Northampton, provision is made for such children at the School for the Deaf at Boston, and at the American Asylum at Hartford, Conn., and a committee of the Board meet annually with the principals of the several institutions, to decide what pupils are best fitted for one or the other of these schools.

Through the liberality of the State and the members of the Centennial Commission, the Board was enabled to make a very complete exhibition of the educational work of the State at the Centennial. No other exhibit compared with it in extent, variety, method, or interest. Harvard, Williams, Amherst, and Tufts, of the colleges for men, Holyoke, Wellesley, and Smith, for women, the Technical Schools of Boston and Worcester, the Normal Art, and other Normal Schools, the High, Grammar, and Primary Schools, all exhibited appliances for teaching in their several grades, and, so far as practicable, the results they reach. The exhibition of the State was greatly to her credit, and showed that she stood foremost among the States in the excellence of her educational institutions.

Yet here in the midst of our exhibit, the judges, at a meeting with a committee of the Board, asked if Massachusetts had any system of education, or only a congeries of systems. When asked what was meant, we were referred to those States where, step by step, the pupil passes through the various State institutions, from the infant up through the primary, grammar, common, high, Latin, and technical schools, to the university. In theory, the system is a symmetrical pyramid, from the foundation to the top stone. In Massachusetts, the college is the foundation of our educational system, and shapes the course of our instruction. The former is the German, and the latter the English system.

When pressed further for an answer, we called attention to the great number of our distinguished men and women educated in our Common Schools, and asked, "Does not the fruit prove the value of the tree?" The answer returned was, that those examples all show what has been done under our system, and what might have been done under a better one. These two systems are radically different in their theory and object, and we admit that the German system has secured for Germany the thorough education of all classes, which the English system has not done for England. In the one, the progress is regular and symmetrical, and the whole system of education is under the immediate direction and supervision of the State. Good schools are provided for all, and education is compulsory. The English system was in operation long before the German, and was designed to secure a thorough classical and mathematical education for the aristocracy. As a part of the system, the preparatory schools of Eton and Rugby were founded, but, until within a few years, nothing was done for the education of the common people. Even now the system of instruction has no connection with, and but little relation to, the college course. It was this system that our fathers brought to this country. Within two or three years after Massachusetts Bay Colony was planted, Harvard College was founded. For over two hundred years it prescribed, by its requirements of admission, the entire course for all other schools. Academies and other colleges followed,—all corporations, over which the State had only an indirect control not felt by the corporation. Private academies have been gradually superseded by public schools; the course of education changed and prescribed by the State; natural history, physics, and drawing have been to a great degree substituted for the mathematics and grammar of former years. The college, from its wealth and power, has become independent of the State, and forms no part of our system of Public Schools.

In Massachusetts education is directed partly by the State, partly by each city and town; while the highest is under the direction of corporations. It may be inexpedient to change the character of our system at present, but, sooner or later, the change will come. The Public School course must be extended from the Primary, through the High School, to the university, and thus a free education be offered to all.

In technical education, the German schools are undoubtedly superior to our own; but, with this exception, we believe that no schools of any State or country surpass our own. This is due, not to the superiority of our system, but to faithful, intelligent, individual effort.

The private schools in our State, we believe, should in some way be brought under a system of supervision similar to that of the Public Schools. We suggest that such schools should make some returns to the Board of Education, as to the number of teachers, number of pupils, hours of instruction, course of studies, and means of teaching.

Three years ago, the Board were authorized to employ five agents. The State was districted, and a thorough system of visitation established. Each town and every school was to be visited. School committees, parents, and teachers were to be advised, but before the system could be tested the number of agents was reduced to two, and the work could not be carried on.

The Board have repeatedly called the attention of the Legislature to the necessity of providing more liberally for the education of the children in the smaller towns of the Commonwealth. Funds sufficient are easily raised in the large cities, but in the smaller and poorer towns the same relative taxation does not yield the same amount, and the total tax, with the proportion of the school fund, is not enough to support good schools. If, then, good schools are to be maintained throughout the Commonwealth, and educational advantages, somewhat nearly equal, are to be enjoyed by the children in all parts of the State, some provision must be made by which the poorer towns shall receive aid from the more wealthy.

Nine Teachers' Institutes have been held the past year, in eight counties of the State. These were largely attended by school committees and teachers, and a general interest was awakened. They were held, some for four days, others for two, in which regular instruction was given by the Secretary and agents of the Board, by the Normal School teachers, and others. The evenings were devoted to discussions and lectures upon educational subjects. The attendance in the aggregate was about 1,800; and thus the teachers, in different parts of the State, were made acquainted with the new Secretary, became aware of his deep interest in their work, and of his sympathy with them, and under his influence gathered new inspiration. The methods of instruction practiced in the Normal Schools were made prominent, and those who had never enjoyed the privileges of those schools learned something of their excellence.

During the past year the Hon. Joseph White, for many years the honored Secretary of the Board, resigned his position, and Hon. J. W. Dickinson was chosen to fill his place. Mr. White, though called from a different sphere of labor, soon became acquainted with the history of education in our State, and the laws relating to it. He was devoted to the work, a man of excellent judgment and of earnest purpose, ever ready for each new work proposed. Nearly two years ago, and again in the autumn of 1876, he proposed to resign, but was prevailed upon by the Board to remain. At the last annual meeting of the Board, he declined a re-election, consenting only to remain in office until a successor could be appointed. The Board tenders to Mr. White their grateful thanks for his long, faithful, and most valuable services, and hope that in any improvement which may come to our school system, and in any higher and more extended education of our people, the results of his own labors, he may see and rejoice in them.

Mr. Dickinson, the new Secretary, is widely known as an able educator and an accurate scholar. He brings to the office the wisdom acquired by many years of experience in teaching teachers, and in studying and discussing school systems and methods of education. He will not only sympathize with teachers in their trials and difficulties, but he will greatly aid them in the discharge of their responsible duties. He enters upon the duties of the office with a deep interest in the welfare of our schools, and with a full appreciation of the important relation they hold to the prosperity of the people and the State. The Board have great confidence in the results of his labors.

In conclusion, we would suggest that the usefulness of the Board should not be measured by what it has actually done. Many things we have proposed to do, but have failed to accomplish for lack of power. Had our recommendations been adopted and carried out, we believe that not only the cause of popular education would have been advanced, but our mechanical industries would have been improved, and our natural resources more developed.

ALEXANDER H. RICE, *ex officio*.
HORATIO G. KNIGHT, *ex officio*.
GARDINER G. HUBBARD.
WILLIAM RICE.
CONSTANTINE C. ESTY.
EDWARD B. GILLETT.
CHRISTOPHER C. HUSSEY.
HENRY CHAPIN.
CHARLES B. RICE.
ALONZO A. MINER.

JANUARY, 1878.

REPORTS OF VISITORS

OF THE

NORMAL SCHOOLS.

FRAMINGHAM.

We are happy to report the highly satisfactory condition of this school. Miss Ellen Hyde, the principal, well sustained by the assistants, has been devoted to its interests, and her management has been popular and successful. She reports to us a steady improvement in all the school arrangements and work.

The graduates find ready employment as teachers, give good satisfaction, and the demand for them is beyond the ability of the school to supply.

Miss Mary L. Eastman resigned as assistant in July. In view of the action of the Board in January last, reducing, from this time, the number of classes in all the Normal Schools, which action will involve changes in the course of studies, no one has yet been appointed in her place; but her work for the current fall term has been performed by three partial teachers,—Miss Emily M. Bullard, Miss M. Isabella Stone, and Rev. L. R. Eastman, Jr. Miss Thompson resigned as teacher of elocution near the close of the last term, and was succeeded by Miss Jennie Ireson; the principal speaks of her as enthusiastic, and doing excellent as well as most necessary work, with very apparent good results.

The statistics for the year ending in July are as follows:—

Whole number of pupils,		130
From Middlesex County,	57	
Worcester County,	33	
Norfolk County,	12	
Franklin County,	2	
Bristol County,	2	
Suffolk County,	1	
From other States:		
New Hampshire,	8	
Vermont,	3	
Connecticut,	3	

New York,	3
Maine,	2
Alabama,	1
South Carolina,	1
District of Columbia,	2

Number of graduates:

January,	19
July,	21

Number entering class:

September, 1876,	31
February, 1877,	14
Average age of those admitted,	17

Occupations of parents: Farmers, 28; shoe manufacturers, 20; mechanics, 17; shopkeepers, 7; teachers and painters, 5 each; clergymen, grocers, manufacturers, and engineers, 4 each; milkmen, stone-masons, lawyers, and butchers, 3 each; millers, insurance agents, woollen spinners, conveyancers, and sea-captains, 2 each; baker, sexton, roadmaster, civil engineer, druggist, expressman, editor, physician, lime-maker, and potter, 1 each.

Number who received State aid:

Fall term,	22
Spring term,	12
Number of different ones for the year,	26

The school at the present time numbers 100.

At the beginning of this current fall term, 47 were admitted, being a larger class than any admitted since 1851.

Interesting lectures were delivered during the year ending in July by Rev. C. C. Hussey; Mr. Hosea H. Lincoln of South Boston; Messrs. G. A. Walton and E. A. Hubbard, Agents of the Board; Rev. A. D. Mayo of Springfield; Prof. A. Graham Bell, Prof. W. P. Atkinson, and Miss Kirtland of Boston; Hon. Joseph White and Hon. John W. Dickinson, the late and present Secretaries of the Board; also by several of the teachers.

About one hundred and twenty volumes have been added to the library from the $170.31 received from the Todd Fund. These books are valuable, and in constant use. Further and substantial additions are needed.

The model school, or "school for practice," of two grades, numbering nearly 60, made up from the children of the town, has of late been in the care of Miss Ellen Williams and Miss

Augusta Barber. The principal regards it as "invaluable, and an indispensable part of our apparatus." The rooms which it occupies are very unsuitable, and are needed for other purposes. It is important that some provision be made for it by the enlargement of the present building, or the erection of a new one.

A new piano has been placed in the main hall. The boarding-building has been thoroughly painted on the outside, and new heating apparatus supplied. Two coats of paint are needed on the outside of the school-building. To meet this expense, and also the expense of fence and other improvements, and the care of grounds, an appropriation of $800 will be required.

In August, Miss Maria P. Beach of Rome, N. Y., took charge of the boarding-building, as matron, succeeding Miss Wales. Her management is pleasant and satisfactory. But however competent a matron may be, a large share of the duties and anxieties of the principal are, of necessity, connected with the oversight of the building and responsibility for its proper condition, and the comfort and health of the pupils residing in it.

We have every reason to believe that the coming year is to be a prosperous one for the institution.

C. C. ESTY,
HENRY CHAPIN,
Visitors.

DECEMBER, 1877.

WESTFIELD.

The most notable event in the history of this school for the past year is the change in the corps of instructors. By the action of the Board of Education in February, 1877, Mr. Dickinson, since 1852 a teacher in the school, and since 1856 its able, indefatigable, and distinguished Principal, was promoted to the broader work of superintending the educational interest of the State.

Of the services rendered by Mr. Dickinson during his connection with the school, it is unnecessary to speak at length. They are already well known to this Board, who have shown their high appreciation of them, by electing him as their Secretary. It is sufficient to say in this report, that the wide and enviable reputation of the school, to-day, is in a large measure the result of the enthusiasm and untiring energy of Mr. Dickinson, and of his rare skill as a teacher and manager.

At the close of the summer term, Mr. Diller resigned the position he had held for four years, that he might give his whole time to preparation for original investigations in the department of geology, to which he proposes to devote himself. Mr. Diller's services were exceedingly valuable from the first. By his cheerful temper and his unselfish devotion to all the interests of the school, he endeared himself alike to teachers and pupils. He bears with him, as he leaves us, our heartiest wishes, and our hopes that the future may bring him the success he deserves.

To prepare for effective labor in his new field, Mr. Dickinson was absent for a large part of the summer term, leaving the general management of the school to Mr. Scott, who received the hearty support and co-operation of the other teachers. It is greatly to his credit and to theirs, that under circumstances of peculiar difficulty, they did not permit any of the interests of the school to suffer.

The election of Mr. Scott as Principal was an event subsequent to the termination of the school year covered by this report, yet the visitors would embrace this opportunity to express their high satisfaction, that the principalship so long and so successfully held by our present worthy Secretary has been filled by the election of one whose marked ability as a teacher in this school has commended itself to our favorable notice for a long period of years; and whose ability as an executive officer, during the period referred to, as well as since, has given assurance of eminent success in the position he now holds.

The improved facilities for teaching chemistry, furnished early in the year, have been employed to the fullest possible extent, and have added greatly to the enjoyment and the profit of pupils in that department. Graduates of the school can now go out with sufficient skill in manipulation to perform a large number of the most instructive experiments in elementary chemistry with safety to themselves and to their pupils.

For some years the reference library, though excellent in its way, has been inadequate to meet the growing demands of the school. This difficulty has been removed in part by the purchase of standard works of recent date in various departments.

The cabinets are steadily growing, through donations by the teachers in natural history, by pupils, and by friends of the school. The rooms set apart for the collections are crowded with specimens, and a large amount of material is now in packages awaiting provisions for its display and preservation. Additional accommodations will soon become an imperative necessity. It is proper to say, in this connection, that these collections are not merely ornamental. They are constantly used in the classes in physiology and natural history, and it would seem that the school might as well dispense with its school furniture, as with these.

Directly and indirectly the Westfield School has done a great and good work in the past. We see no reason why its future work should not be equally beneficial in its results.

The statistics of the school for the year are as follows :—

Members.

Ladies,	147	
Gentlemen,	23	
Total,		170

Of this number, Hampden County sent 62; Hampshire, 25; Berkshire, 21; Worcester, 14; Franklin, 12; Middlesex, Suffolk, Norfolk, and Essex, each 1; Connecticut, 9; New York, 5; Vermont, 5; New Hampshire, 4; Pennsylvania, 2; Maine, Ohio, Kansas, Florida, District of Columbia, Nova Scotia, and Canada, each 1. Total, 170.

Graduates.

January, 1877:		
Ladies,	23	
Gentlemen,	2	
Total,		25
June, 1877:		
Ladies,	24	
Gentlemen,	4	
Total,		28
Whole number:		
Ladies,	47	
Gentlemen,	6	
Total,		53
Average age:		
Ladies,	20 years 6 mos.	
Gentlemen,	22 " 9 "	
General average,	20 " 8 "	

Entering Classes.

August 31, 1876:		
Ladies,	45	
Gentlemen,	5	
Total,		50
February 8, 1877:		
Ladies,	19	
Gentlemen,	3	
Total,		22
Whole number:		
Ladies,	64	
Gentlemen,	8	
Total,		72
Average age:		
Ladies,	18 years 10 mos.	
Gentlemen,	19 " 11 "	
General average,	18 " 11 "	

Occupations of Parents: Farmers, 29; professionals, 12; mechanics, 10; merchants, 7; manufacturers, 4; milkmen, 2; laborers, 2; warden, 1; miller, 1; pedler, 1; baker, 1; unknown, 2. Total, 72.

Recipients of State Aid.

Fall and winter term, 1876–7 :		
Ladies,	32	
Gentlemen,	1	
Total,		33
Spring and summer term, 1877 :		
Ladies,	35	
Gentlemen,	2	
Total,		37

WILLIAM RICE,
E. B. GILLETT,
Visitors.

BRIDGEWATER.

This school continues under the care of Mr. A. G. Boyden, who has been for many years its faithful and efficient principal. There has been no change the past year in the corps of assistants, some of whom have been a long time in the school, and all of whom are conscientiously devoted to the work they are successfully doing, aided, in no small degree, by the unity of purpose amongst themselves, and with the principal.

The Visitors can speak of the school in terms of high commendation to those who may be looking, for themselves, or others, to the work of teaching. Any who share the doubt which sometimes comes to expression of the necessity of special Normal training to the fullest qualification of a teacher, would find their doubts removed by a knowledge of what is being done in this school and others for the same object. While as the demand for skilled labor increases in all departments, the testimony grows clearer to the value of thorough special training. That a large number are coming to see this, while some may profess to question it, is manifest by the increased patronage of our Normal Schools, and by the greater number, as shown by the statistics below, who take the advanced course. The cheerful, home-like life of the pupils in the boarding-place is worthy special mention, both for its value and because of the difficulty of its attainment where large numbers are to be provided for. The success in this particular is cause for congratulation to the friends of Normal education, and reflects much credit on the painstaking supervision of the principal, and the faithfulness of those associated with him.

The statistics for the year ending July 3, 1877, are as follows: —

Whole number belonging to the school:

Gentlemen,	80	
Ladies,	131	
		211

Of this number, Plymouth County sent 51; Bristol, 34; Middlesex, 30; Norfolk, 25; Barnstable, 14; Suffolk, 5; Essex, Nantucket, and Worcester, each 4; Franklin, 1; the State of Maine, 14; New Hampshire, 12; Connecticut, 3; Rhode Island, Pennsylvania, Ohio, and West Virginia, each 1; Nova Scotia, 2; Burmah, 1; Japan, 1. Totals: Massachusetts, 172; other States, 35; other countries, 4.

Number of graduates:		
From two years' course — Gentlemen,	18	
Ladies,	30	
From four years' course — Ladies,	2	
		50
Number in the entering classes:		
Gentlemen,	38	
Ladies,	60	
		98

Average age of those admitted:	
Gentlemen,	20 years 2 months.
Ladies,	20 " 3 "
General average,	20 " 2⅓ "

Occupations of parents: Farmers, 32; mechanics, 23; merchants, 5; manufacturers, painters, sea-captains, bookkeepers, 3 each; clergymen, lawyers, superintendents, butchers, storekeepers, sailors, 2 each; physician, teacher, librarian, clerk of court, custom-house officer, expressman, gardener, teamster, watchman, 1 each; unknown, 4.

Number of those who received State aid — fall and winter term, 1876–77:		
Gentlemen,	14	
Ladies,	10	
Total,		24
Number of those who received State aid — spring and summer term, 1877:		
Gentlemen,	11	
Ladies,	16	
Total,		27
Number of different pupils who have received aid during the year:		
Gentlemen,	17	
Ladies,	18	
Total,		35
Whole number who have been admitted to the school,		2,482
Gentlemen,	861	
Ladies,	1,621	
Whole number of graduates,		1,490
Gentlemen,	524	
Ladies,	966	

A comparison of the statistics of this year with those of previous years presents some encouraging facts.

The number in attendance has been:

First term—Gentlemen,	59	
Ladies,	110	
		169
Second term—Gentlemen,	67	
Ladies,	102	
		169

The number of young men, and the total number in attendance, each term of this year, has been larger than in any previous year. The pressure of the times has had the effect to reduce somewhat the number of ladies in attendance, but the number of young men has been steadily increasing.

The number graduated and the number of admissions has closely approximated the highest numbers in previous years, while the average age of those admitted is greater.

An examination of the occupation of the parents of those admitted, shows that the majority of these persons are the children of farmers and mechanics. Most of them are persons of moderate means, who are thoroughly in earnest to qualify themselves for successful teaching.

Of the ninety-eight candidates received, there have come from—

High Schools,	gentlemen, 21;	ladies, 33.
Academies and Private Schools,	" 12;	" 11.
Grammar Schools,	" 3;	" 12.
District Schools,	" 2;	" 1.
Normal Schools,	" –;	" 3.

The majority of these are from High Schools. More than half of those who take the longer course of study in this school come from High Schools. This fact shows the effect of High School training, in awakening in the minds of those who receive it the desire to prepare themselves for more extended usefulness. The High School is of inestimable benefit to the community, in affording to the children of parents of limited means the opportunity of preparing to become skilled workers in the various vocations which they will enter.

The Normal School presents to its members three courses of study: one extending through two years, consisting entirely of English studies; another extending through four years, which includes all the subjects of the two years' course and the subjects required to be taught in the High School; and a third, including the subjects of the two years' course and a part of the additional subjects of the four years' course, which meets the wants of those who desire to take the two years' course, with one or two additional terms of study. The longer course of study was introduced in 1870, to meet the demand for Normal teachers prepared for a higher grade of teaching. Classes in the four years' course are formed at the beginning of each fall term. The number of pupils pursuing these longer courses at the beginning of each school year, since their introduction, is as follows:—

In 1870,	gentlemen, 2;	ladies, 1.
1871,	" 4;	" 12.
1872,	" 3;	" 9.
1873,	" 3;	" 9.
1874,	" 9;	" 14.
1875,	" 13;	" 18.
1876,	" 20;	" 17.
1877,	" 37;	" 21.

One-third of the school are, at the present time, pursuing these longer courses of study. The success of the graduates from the four years' course has abundantly shown the wisdom of its establishment. The effect has been to increase the number of pupils in the school, to stimulate all the pupils to higher endeavor, and to give the school a higher place in the public estimation. There is a growing demand for the most thoroughly trained Normal teachers. The Normal Schools must have the time and means to furnish this training, or they will fail to meet the demand of the times.

A life-size anatomical model of the human body, and enlarged models of the eye, larynx, and several of the internal organs, have been obtained from Paris, to aid in the study of the human body. A large globe, three feet in diameter, handsomely finished and mounted, and of the most improved kind, has been procured from London, to aid in the study of geography and astronomy.

There has been no change in the corps of teachers during the year. Another year's experience in faithful work has increased their efficiency as educators. It is the aim to distribute the work of the school in departments, so far as is practicable, so that each teacher may come to the work of his department with the best preparation he can make.

The boarding-hall has been full, and in successful operation through the year. The health of the students has been uniformly good. The hall has been painted on the outside, and is in good condition throughout. There has been no change in the rates of board since the hall was opened. Improvements have been made in each department as the funds would allow, but no appropriation has been made by the Legislature for any repairs or improvements since the hall was erected.

A new fence around the school-grounds is very much needed; and it seems very desirable that an appropriation for this purpose should be made this year.

C. C. HUSSEY,
GARDINER G. HUBBARD,
Visitors.

SALEM.

The Visitors take pleasure in being able to speak of the continued prosperity of this school, and of the efficient work which is done in all its departments. It remains under the charge of the same thoroughly competent principal, by whom its affairs are administered with great intelligence and energy and carefulness. The corps of assistant instructors is also substantially without change; and with many of these teachers the school has the benefit of long experience and of matured capacity. The distinctive use of such institutions, not as places merely of general education, but as schools for teaching the art of teaching, is held here steadily in mind. It is believed that the results, as experienced throughout the wide region into which these pupils go forth to practice their art, are of such a sort as fully to justify and repay the public expenditure here involved.

The school is full as to numbers; quite up to its proper limit. Not more than three-fourths of those applying for admission are received. The standard at entrance is higher somewhat than in the past. There is a process of sifting as the pupils pass from one class to another. And though it is not claimed that the purpose never fails, it is yet true, that there is an intent, steadily and intelligently followed, to bestow the advantages of the school only upon such as may fairly be expected to become successful teachers; and with no low measure of what should be regarded as success.

The statistics of the school for the year ending July, 1, 1877, are as follows:—

1. The whole number of pupils belonging to the school during the year was 312.

Of this number, Essex County sent 194; Middlesex, 61; Suffolk, 19; Franklin, 2; Norfolk, 2; Barnstable, 1; Berkshire, 1; and Bristol, 1. The State of Maine sent 9; New Hampshire, 17; Vermont, 2; Virginia, 1; Illinois, 1; and Wisconsin, 1.

The number present during the term which closed January 16, 1877, was 255; during the term which closed June 26, 1877, 250. The whole number since the school was opened, September, 1854, is 2,100.

2. The number graduated January 16, 1877, from the regular course, was 28; the number graduated June 26, 1877, from the regular course, was 37; and from the advanced course, 8.

The whole number of graduates of the school (44 classes) is 990.

3. The number that entered the school, August 29, 1876, was 86; the number that entered February 6, 1877, was 47.

4. The average age of the class admitted August 29, 1876, was 18.19 years; of the class admitted February 6, 1877, 17.66 years.

5. The fathers of the pupils admitted during the year are, by occupation, as follows: Farmers, 20; shoemakers, 10; carpenters, 6; merchants and painters, 5 each; clergymen, curriers, grocers, sea-captains, 3 each; butchers, cabinet-makers, carriage-makers, dealers in wood and coal, dyers, expressmen, fishermen, janitors, laborers, lawyers, machinists, masons, mechanics, physicians, and tanners, 2 each; baggage-master, blacksmith, bookkeeper, carder, clerk, commission merchant, confectioner, cooper, dealer in bark, dealer in extracts, dealer in hay and grain, fish dealer, foreman, gold-beater, hair-dresser, harness-maker, insurance agent, landscape gardener, leather cutter, lumber dealer, manufacturer of patent grease, merchant tailor, operative, overseer, policeman, pumpmaker, railroad agent, real-estate agent, sailmaker, salesman, shipbuilder, ship merchant, shoe dealer, shoe manufacturer, soapmaker, stable-keeper, stone-mason, student, teamster, watchman, and woollen manufacturer, 1 each; unknown, 4.

6. Number that received State aid during the fall and winter term, 1876–7, 24; during the spring and summer term, 1877, 30. The whole number of different pupils that received State aid during the year was 45.

7. The number that received aid from the Bowditch Fund during the first term was 23; during the second term, 28. The number of different pupils thus aided during the year was 38.

8. Of the class admitted in August, 1876, 15 had taught

school; of the class admitted in February, 1877, five had taught; total, 20.

9. Number of students connected with the several classes during the first term of the year: Special students, 6; advanced class, 19; Class A (Senior), 32; Class B, 52; Class C, 47; Class D, 99.

Number during the second term: Special students, 7; advanced class, 12; Class A, 43; Class B, 46; Class C, 83; Class D, 59.

10. Of the 133 pupils admitted during the year, Lynn sent 18; Salem, 16; Lowell, 14; Gloucester, 9; Boston and Peabody, 5 each; Danvers and Newburyport, 4 each; Beverly, Essex, Merrimac, and Somerville, 3 each; Andover, Lawrence, Salisbury, Stoneham, Swampscott, Wakefield, and Wilmington, 2 each; Billerica, Cambridge, Chelsea, Hamilton, Littleton, Malden, Orange, Sandwich, Saugus, Stockbridge, Wenham, and Winchester, 1 each.

The State of Maine sent 3; New Hampshire, 12; Vermont, 3; Illinois, 1; and Wisconsin, 1.

11. Of the 2,100 pupils admitted to the school since its establishment in 1854, 1,834 have belonged in Massachusetts; 902 having come from 17 cities, and 932 from 142 towns. Every county has been represented in the school, as follows:—

Barnstable (9 towns),	17	pupils.
Berkshire (4 towns),	4	"
Bristol (3 cities, 15 pupils; 5 towns, 9 pupils),	24	"
Dukes (2 towns),	2	"
Essex (6 cities, 602 pupils; 29 towns, 559 pupils),	1,161	"
Franklin (4 towns),	6	"
Hampshire (1 town),	2	"
Hampden (1 city, 1 pupil; 2 towns, 2 pupils),	3	"
Middlesex (4 cities, 181 pupils; 33 towns, 213 pupils),	394	"
Nantucket (1 town),	14	"
Norfolk (14 towns),	27	"
Plymouth (10 towns),	25	"
Suffolk (2 cities, 101 pupils; 2 towns, 11 pupils),	112	"
Worcester (1 city, 3 pupils; 27 towns, 40 pupils),	43	"

Two hundred and sixty-six pupils have come from outside of this State; 260 of whom came from 20 different States, two from the District of Columbia, two from Canada, one from Nova Scotia, and one from England.

In proportion to their population, the towns have sent a larger proportion of pupils than the cities. Essex and Middlesex counties have sent 74 per cent. of all the pupils. The six cities of Essex County have sent an average of one pupil for every 229 of the population, while the twenty-nine towns have sent an average of one pupil to every 152 of the population. Four cities of Middlesex County have averaged one pupil for 748 people, while thirty-three towns have averaged one for 510 people.

Almost every class of society has been represented in the school; comparatively few, however, having come from families that are called wealthy. The records show that the fathers of the pupils have been engaged in nearly two hundred and fifty different occupations. The following figures give the numbers engaged in the leading occupations: —

Mechanics.— Shoemakers, 160; carpenters, 136; machinists, 32; blacksmiths, 24; miscellaneous, 156. Total, 508.

Farmers, 386; merchants and traders, 239; sea-captains, 69; clergymen, 54; physicians, 28; lawyers, 18.

12. Nineteen volumes have been added to the general library of the school by gift, and 381 volumes to the text-book library by purchase.

A substantial iron fence has been constructed on the south side of the school lot, with the avails of the appropriation made for that purpose at the last session of the Legislature, and the yard adjoining has also been graded and otherwise improved.

Additional apparatus and better appliances for teaching are needed in connection with some branches of natural science. The arrangements for warming the rooms are also inadequate in severe weather. We will be content, however, with these furnishings as they are while the pressure of the times continues, and will only ask from the State the renewal of its accustomed wise and generous appropriation for the ordinary uses of the school.

GARDINER G. HUBBARD,
CHAS. B. RICE,
Visitors.

WORCESTER.

The Visitors of the Worcester Normal School have watched its progress with careful interest. The school-building, in its plan and finish, seems to be a success. The heating, ventilation, furnishing, etc., are eminently satisfactory, and the fidelity and fitness of the teachers have been remarkable. The graduates, with the exception of those who have chosen to take an advanced course since their graduation, have all been employed, more or less, in teaching, and the reports in reference to them, from those who have had an opportunity to know the facts, are of the most flattering character. The thoroughness with which they have been fitted for their duties has demonstrated the wisdom of the course of instruction pursued in the Worcester Normal School, and will do much towards furnishing a class of teachers of a high order of qualifications.

Teachers. — The teachers of this school remain as reported one year ago. Their services have been rendered without interruption from sickness or other cause.

Students. — The attendance of students has been regular and constant. While not a few have failed to give promise of future excellence, and have been advised to withdraw, most have succeeded in maintaining good standing, and a respectable number have been graduated.

The graduates, almost without exception, have speedily found employment, and not one is known to have failed as a teacher.

Each member of the two classes graduated within the year was examined and approved by the committee on teachers of the Worcester School Board before receiving the diploma, and became, therefore, eligible to any vacant position in the city schools, without further examination. This plan of submitting the work of the school to an impartial popular test has secured a valuable public recognition of the practical efficiency of the

Normal School, and has tended to establish the most friendly relations between the State and local school authorities.

Apprenticeship. — A feeling exists in the community, especially among school officers, that a weak point of the Normal School course is its failure to bridge over the chasm that separates theory from practice. It is alleged that the Normal School, as such, offers its students little or no opportunity to cultivate or exhibit the essential faculty of teaching, because it offers them no school to teach during their pupilage. Our so-called "teaching exercises," it is said, are at best but rehearsals, wherein the teaching student does not really teach, but only exhibits a form of instruction; his classmates being in reality not his pupils, but his critics; while his faculty of school management has no play whatever. This want of real experience in the graduates of Normal Schools is urged by school committees as reason for declining to employ them except as novices and upon probation. Probably the objection cannot be wholly removed. It besets all professional schools alike, and is in fact inherent in the learning of every art.

When our critics tell us that we need "less theory and more practice," they tell us at most only half the truth. We need all the sound theory we can have; but if we could find for our pupils better opportunities of reducing their knowledge to skill, of translating their knowing into doing, two obvious advantages would accrue: first, we should have a surer criterion of judgment as to their teaching capacity; and, secondly, our diploma would enable graduates to command better positions at the start.

It was in the hope of contributing something to the solution of this problem that an effort was made, soon after the organization of this school, to introduce into the course of training some practice in teaching in the Public Schools of this city, which might, if successful, lead to the establishment of a term of apprenticeship as one of the requirements for graduation.

The plan hitherto pursued is substantially as follows: —

1. *Preparation.* — In connection with the study of methods, which is begun early, our pupils are required during the second half of their first year to make themselves acquainted with the school system of Worcester, that being taken as a convenient type of the public instruction in the Commonwealth.

For this purpose the course of study pursued through all the primary and grammar grades, the code of rules and regulations of the school committee, and a list of the schools and teachers are supplied to each pupil, and carefully studied. The way is thus prepared for the second step; namely,—

2. *Observation.*—The pupils, never more than two in company, now visit every grade of schools in the city, except the High School, and carefully observe the details of their practical working, with regard to both instruction and management. The grades are taken in order, the lowest first, so that the connection of the course of study and the successive modifications of discipline may be distinctly traced. The results of this observation are reported and discussed from week to week in the class in methods.

3. *Practice.*—Early in the senior year, after the preparation and observation above detailed, each member of the class is assigned as assistant to a particular school of the first (or lowest) grade, becoming thereby an "apprentice" to the teacher in charge of that school.

The first period of this service is three weeks, during which the apprentice spends every forenoon in the school. A second term of the same length is served, after an interval of several weeks, under another teacher, and in a school of higher grade.

The teachers selected are of the best and most successful in the city.

The duties of the apprentice are, *to learn* and *to assist.* The learning comes mainly, of course, through observation, experience, and the suggestions of the teacher in charge. The assistance rendered is slight at first, being chiefly correcting slates and papers, helping exceptional scholars, and the like; but it soon extends to class instruction in important branches, and finally, in most cases, to taking sole charge of the school for an hour or a day, according to the capacity shown by the pupil and the discretion and temper of the teacher. The teacher of methods in the Normal School visits all the apprentices, observes their work, and offers such criticisms as seem likely to be helpful. Finally, a report in the following form is made by the teacher under whom each apprentice has served :—

[STATE NORMAL SCHOOL AT WORCESTER.]

Report of the apprentice-work of
Grade , Street School.
Time, from to , days.
Scale, 10 — use no fractions.

No. of Absences.	No. of Tardinesses.	Power of Control.	Power of Interesting.	Skill in Questioning.	Skill in Explaining and Illustrating.	Enthusiasm.	Bearing.

1. What peculiar trait of excellence (if any) has been shown in teaching or management?
2. What weakness or deficiency?

(Signature.) ____________________

4. *Results.*—By thus distributing the pupil-teachers throughout the city, having but one in a school, the common objection of parents to having their children "experimented with" by a succession of Normal School pupils is wholly avoided. Again, the pupil, having thus, as it were, a school to himself, has an advantage in the fresher interest which the children take in his methods of teaching.

There was at first some fear of unwillingness, on the part of teachers, to assume the care and responsibility of taking apprentices, but this has been mostly dissipated by the results of a three years' trial of the plan. The schools are found to be but little disturbed by the presence of apprentices; while teachers are often relieved of considerable drudgery, and sometimes helped in the work of instruction, by willing and apt assistants. We are fortunate in having a large body of good teachers to select from, many of them Normal graduates, and not a few of eminent ability. The school committee and superintendent have shown cordial interest in the experiment, giving us their hearty co-operation at every step.

That the practice benefits our students, is certain; and that the benefit is worth the time spent, is also believed by those who are in the best position to judge. Even the short experience of six weeks gives the pupil a much more adequate conception of a school than he had before. No words could have told him what he has learned for himself, perhaps by bitter experience. The ideal "school," so often referred to by his teachers, for purposes of analytical instruction in the principles and methods of education, is no longer the mere lay figure it once was, passive to every touch, but a thing of flesh and blood, having individuality and character not derived from the teacher, and by no means to be lightly surrendered to him. When he is told that the mind of childhood is "plastic," he understands the word with some limitations of meaning, not with a treacherous literalness that will prove a snare to his feet. The Public Schools are alive and in motion. They have not been subdued to the uses of the tyro, and will not kneel for him to mount. The pupil cannot but learn humility, confronted thus by the real difficulties of an on-going school, which probably does not conform to his preconceived notions, and will not wait for him to readjust his ineffectual plans. These stern conditions, however, by driving him in upon himself, sift out his flimsy expedients and sharpen his discrimination, leaving him richer and stronger than before. His success, however small, is genuine, and the consciousness of this adds courage to his humility; while his failures, if not due to want of preparation, betray a weakness of hand very difficult to discover by any test that can be applied in the Normal School class-room or the "model school."

Another important thing which the pupil learns by apprenticeship, is, how to assist, how to adopt and carry out the suggestions of superiors,—a most needful lesson to teachers, prone as they are to undervalue the necessity of supervision and co-operation.

The advantages above indicated are believed to be more effectually secured by some form of apprenticeship, than they could be—at least in this school—in any other way. A longer term of this service would better serve the same end. If a probationary experience of, say, six months were required for the full honors of graduation, the diploma could scarcely fail to gain increased value thereby.

Lectures.—Lectures have been delivered during the year as follows: By Rev. A. D. Mayo of Springfield, on "Books and Reading"; by Prof. L. S. Burbank of Woburn, on "Mineralogy and Botany"; by Gardiner G. Hubbard, Esq., of

Cambridge, on "A Trip Across the Continent"; by Prof. J. R. Eastman of the National Observatory, Washington, on "The Discovery of the Satellites of Mars"; and by Prof. E. A. Shelton of Oswego, N. Y., on "Liberty in School." Hon. Wm. T. Harris, LL. D., of St. Louis gave the annual address at Commencement, upon "The Sphinx Riddles of Education."

Library.—One hundred and fifty-six volumes have been added to the reference department of the library, and three hundred and ninety-seven volumes to the text-book department.

The whole number of volumes now belonging to the school is three thousand three hundred and fifty-three.

This library is obviously inadequate to the needs of the school, and should be at least doubled.

Statistics.—The statistics of this school for the year 1877 are as follows:—

Whole number belonging to the school during the year:

Ladies,	151	
Gentlemen,	5	
Total,	——	156

Of this number, Worcester County sent 146; Middlesex, 3; Plymouth, Franklin, and Nantucket, each 1; New Hampshire, Maine, New York, and Connecticut, each 1. Total, 156.

Number of graduates:

Ladies,	44	
Gentlemen,	-	
Total,	——	44

Number in the entering class:

Ladies,	36	
Gentlemen,	3	
Total,	——	39

Average age of those admitted:

Ladies,	18	years	4	mos.
Gentlemen,	21	"		
General average,	18	"	8	"

Occupation of parents: Baker, 1; bank president, 1; bookkeeper, 1; clergyman, 1; farmers, 6; gardener, 1; jeweller, 1; laborer, 1; machinist, 1; manufacturers, 5; mechanics, 12; merchants, 3; overseer, 1; paper-hanger, 1; printer, 1; not given, 2. Total, 39.

Number of those who received State aid—fall and winter term:

Ladies,	10	
Gentlemen,	-	
Total,	——	10

Spring and summer term:

Ladies,	10	
Gentlemen,	-	
Total,	——	10

Whole number who received State aid during the year:

Ladies,	20	
Gentlemen,	-	
Total,	——	20

The Visitors are highly gratified that there has been no cause for any change in the corps of teachers of the school during the past year. They are confident that the longer they can keep the ranks of successful teachers unbroken, the better will it be for the school. The sympathy which has existed and still exists among the teachers, the reverence and affection of the pupils, and the general feeling of interest in the school on the part of all the people of this vicinity, combine to convince the Board of Visitors, that, so far as the cause of education is represented in this school, the people of the State of Massachusetts are expending their money judiciously in its behalf.

HENRY CHAPIN,
WILLIAM RICE,
Visitors.

WORCESTER, January, 1878.

FIFTH ANNUAL REPORT

OF

THE BOARD OF VISITORS

OF THE

MASSACHUSETTS NORMAL ART-SCHOOL.

1878.

MASSACHUSETTS NORMAL ART-SCHOOL,

BOSTON.

This school completed its fourth year of existence in June, 1877; and at the distribution of certificates in the school on the twenty-fifth of that month, the first graduate, Mr. Arthur C. Patten, received the diploma awarded by the State. This diploma represents a course of four years of study and successful examinations for the certificates A, B, C, D, each embracing a department of industrial art.

To show the scope of the education given in the school, it may be advisable to define the subjects studied in the four classes.

Class A. First year. *Elementary Drawing.* Certificate-works required, 24; subjects of examination, 12.

Class B. Second year. *Form, Color, and Industrial Design.* Certificate-works required, 15; subjects of examination, 13.

Class C. Third year. *The Constructive Arts, Architecture, and Mechanical Engineering.* Certificate-works required, 12; subjects of examination, 8.

Class D. Fourth year. *Sculpture and Design in the Round.* Certificate-works required, 12; subjects of examination, 6.

Every certificate-work in each class represents a distinct subject or branch of study, and each subject of examination is prepared for by attendance at a course of lectures upon it.

So comprehensive a scheme of instruction as this has not been available to the public or art students in this country before the establishment of the Normal Art-School. The extent to which its advantages have been resorted to may be seen by the number of students attending each year since the opening of the school.

These have been, in 1873–74,	133
in 1874–75,	239
in 1875–76,	307
in 1876–77,	218
Now in the school, 1877–78,	225

Having supplied an evident public need, the school should have its claims to support by the State recognized, and its wants provided for. As stated in previous reports, this can only be secured by the provision of a suitable building, in which the several classes can be accommodated, with such arrangements in regard to lighting and study as only a building erected for the purpose can secure.

There are good reasons for thinking the time has come when it would be an economical measure to develop the industrial resources of the State by means of technical education, and the Board would urge this consideration upon the attention of the General Court. Perhaps a general explanation of the grounds for this action, and a statement of the practical results sought for in the Normal Art-School, will here be in order.

It has been somewhat difficult, through the absence of general information on the subject, to keep clearly before the public mind the true work accomplished in this school, the first and only one of its kind in America.

The aim of the school is to provide teachers of industrial art, as a means of remedying, even if indirectly, the deplorable want of skill and taste in the industries of the State. In any country where apprenticeships to trades are not general, and no substitutes are provided in the form of technical or industrial schools and institutions, — poor substitutes though they may be,— the industrial skill of the community will be undeveloped.

That is the condition, to-day, of many industries here; and where it is not so, the explanation of superiority is generally to be found in the fact, that imported skilled labor has taken the lead.

We must have schools of art and science in every city and town, and classes in the two groups of subjects in every village in the State, before any reasonable hope can be entertained of influencing most favorably our varied industries.

These schools and classes must have specially trained teachers, and such teachers are not self-created. They have always been the fruit of public effort, and secured at public cost.

The modern technical university, while it appeals to the intelligence of all practical men, makes no appeal to the faith or superstition of wealthy benefactors, as did mediæval institutions, and is of too recent origin to have enlisted the patriotic sympathy of the many who have money to devote to educational purposes.

Universities and colleges for general and professional education have practically monopolized bequests and donations, and left industry unprovided for. Yet in recent times and some European countries, not only wealthy and patriotic men, but the most far-seeing governments, have recognized the necessity for practical education in art and science, and are supplying it with unsparing hands.

This is the case where apprenticeships to trades are still zealously maintained. We, in this country, where they have been generally abandoned, are doing little or nothing for the production of skilled labor.

The need of this country for such industrial education is immediate and sore, and the first step towards securing it is the establishment of Normal Art-Schools, the remedy which has been tried and found successful elsewhere.

We have to recognize, then, that this school exists as a practical remedy for a very practical deficiency in our scheme of public education, which causes great annual losses to society both in money and credit.

The nation provides a professional education for its soldiers and sailors only, and leaves other professions to shift for themselves; and States, though sometimes found to be large contributors to advanced education, prefer to leave the majority of such educational enterprises in the hands of private persons or organizations.

But this matter of industrial education is purely an economical one, by which every person is affected as completely as by a high or low tariff; yet our national government has not moved in it, and as yet only Massachusetts, among the States, has seen its vital importance to industrial prosperity, by establishing and supporting an Industrial Art-School.

Whether we are doing the best possible work in educating teachers of drawing and designing, and in the best way, can only be answered by considering the circumstances under which the work is done, and the materials available.

At an early period of our experience, it was necessary to impress on large numbers who sought education in this school, the fact that none could be admitted who wished for instruction in drawing and painting merely for amusement, recreation, or professional art-training, and that the State undertook to train and educate only teachers of industrial art.

Many scores of persons have been thus debarred from admission. This has given rise to a curious misunderstanding, which ought here to be corrected. The conclusion drawn from this condition of admission, which has never been waived, has been, that the school was not adapted to educate artists, but only teachers of drawing, and that is generally the burden of the criticisms on its scheme of education.

The radical mistake underlying such a view is the assumption that a teacher of art need not be an artist.

The true doctrine about this matter is, that the State does not propose to educate people who are merely to become artists, as the term is popularly understood; but it must endeavor to make artists of all its pupils before it can find out whether they have brains and calibre enough to become teachers of art: for who can teach a subject he knows not, and how few can teach well even subjects they know.

The State offers and gives here a four years' training in the practice of art, and it will take no less time to discover who among the many students can aspire to become true teachers. But there will be many artists made here for every teacher worthy of the name; and the students and public should realize that the artists produced who are not teachers will be the failures, and the teachers who must of necessity be artists will be the successes.

Yet it is sometimes ignorantly supposed that a high degree of practical success in art, such as the painting of a good picture in oil or water color, or the modelling of a good bust, statuette, or bass-relief, is not attained here, because only teaching exercises are practised. That is a delusion which should be exploded.

If a student is found to be incapable of doing what a professional art-student, portrait, historical, or landscape painter, designer of sculpture, or draughtsman in the constructive arts is expected to do, then he necessarily falls out of the ranks as a prospective art-master, and becomes a specialist in one narrow subject, having no place here, and no right to be here. And the specialists are generally the weakest, tried by a broad standard. Complete knowledge of any subject requires a rounded knowledge of all subjects related to the main one. And the greatest artists of all times have been the greatest, not only in one, but in all branches of art they practised.

When the school has been long enough in existence to graduate a class of from twelve to twenty every year, then it will become possible to supplement the work of the Normal School by schools of art and science all over the State.

The most hopeful facts in this year's experience are the decrease in the average age of students, and the increase of their attainments. There is a larger proportion among them who are devoting their lives to study now, and are supported while doing so by relatives and friends.

A great majority of the students hitherto have been compelled to work daily for support, and study what they could in the time left, a disadvantage to them and the school. Moreover, many of them have been men and women who find learning new subjects after the meridian of life is passed no easy matter.

As year by year the average age of the student becomes less and less, the work will be better, and their education more complete.

The standard of examination in the classes has been slightly raised this year, though several of the students have distinguished themselves by very high marks.

Looking back at the year's work, now it is over, the Board of Education are to be congratulated on the body of students attending the school. It is not too much to say that they have made good use of their opportunities, and merited their success.

The question is sometimes asked whether there is, at present or prospectively, employment for the graduates of the school. We have to provide for a time, that is not remote, when every city, town, and village will require its industrial art-school or classes, judging by the experience of other manufacturing countries; and it is to the manifest interest of a manufacturing State like Massachusetts that such schools and classes, when established within her borders, shall be provided with competent teachers. The work of this school is to prepare such teachers, and it is believed that no one of its graduates will ever be involuntarily out of employment.

Of those students who have commenced the course of instruction in the school, and taken one or more certificates, the following is a record, showing to what extent they are employed even before graduation :—

Total number of students holding certificates,		134
Of these there are employed in teaching,	81	
Continuing their studies in the school,	25	
Not heard from,	28	

It is probable that many of the twenty-eight not heard from are utilizing their instruction and taking advantage of the certificates they hold ; but the proportion of those known to be already employed, or still studying, 106 out of 134, is sufficient evidence that there is a field for the employment of all.

A new arrangement of the evening classes in the school has been made this year, whereby students may receive instruction in each of the classes A, B, C, D, and the incidental fee has been reduced from ten dollars to three dollars per term of four months. This places within reach of those who are engaged during the day, the opportunity of passing through the whole of the classes, though, of necessity, the time required will be longer than if they attended during the daytime.

By judicious organization, this has been accomplished, not only without additional expense to the State, but on a reduced appropriation.

The annual exhibition of works from the Free Industrial Drawing Classes of the State was held in the school during the month of June, and was attended by a large number of visitors.

The rooms, however, are not adapted for so extensive an exhibition, and it is hoped that before long more appropriate premises may be available.

In connection with this, the Visitors again remind the Legislature that the school deserves, and should have, a building erected and devoted to its use, in which proper accommodation can be given to the several classes, and its administration and supervision be more efficiently carried on.

The State owns a site which is eminently adapted for such a building, and which should be devoted to this purpose, at the corner of Boylston and Dartmouth streets, in close proximity to the Art-Museum.

The Statistics for the Year ending June 30, 1877, are as follows:

The whole number in attendance during the past year is—

Ladies,	149	
Gentlemen,	69	
Total,		218

Of this number:

Suffolk County furnishes	105		
Middlesex County,	66		
Essex County,	15		
Worcester County	9		
Norfolk County,	7		
Plymouth County,	6		
Franklin County,	1		
Hampshire County,	1		
Bristol County,	1		
		211	
Vermont,	3		
Pennsylvania,	1		
Maryland,	1		
New York,	1		
Rhode Island,	1		
		7	
Total,			218

Number in the entering class:

Ladies,	57
Gentlemen,	31
Total,	88

Average age of the entering class:

Ladies,	24 years.
Gentlemen,	23 "

General average, 23½ years.

Whole number of graduates: Gentlemen, 1.

Number of students who in 1877 have taken certificates:

	Ladies.	Gentlemen.	Total.
Certificate A, ...	21	15	36
B, ...	9	4	13
C, ...	–	1	1
D, ...	1	3	4
Total, ...	31	23	54

Number of those receiving State aid: None.

A. A. MINER,
GARDINER G. HUBBARD,
CHAS. B. RICE,
Visitors.

BOSTON, December 27, 1877.

FORTY-FIRST ANNUAL REPORT

OF THE

SECRETARY OF THE BOARD.

SECRETARY'S REPORT.

Gentlemen of the Board of Education:

I respectfully present herewith the Forty-first Annual Report of the Secretary.

Summary of Statistics for 1876–77.

Number of cities and towns—cities, 19; towns, 323,		342
All have made the annual returns required by law.		
Number of Public Schools,		5,556
Increase for the year,	14	
Number of persons in the State between five and fifteen years, May 1, 1876,		296,375
Decrease for the year,	4,459	
Number of pupils of all ages in all the Public Schools during the year,		307,832
Increase for the year,	2,056	
Average attendance in all the Public Schools during the year,		222,704
Increase for the year,	3,801	
Ratio of average attendance for the year to the whole number of persons between five and fifteen, expressed in decimals,		72.34
Number of children under five years of age attending Public Schools,		2,058
Decrease for the year,	26	
Number of persons over fifteen attending Public Schools,		28,190
Increase for the year,	977	
Number of towns which report having made the provisions concerning truants, required by law,		137
Number of different persons employed as teachers in Public Schools during the year—males, 1,176; females, 7,544.		
Decrease of males, 25; decrease of females, 106; total decrease, 131.		
Number of teachers who have attended Normal Schools,		1,898
Average length of Public Schools (8 months and 15 days),		8–15
Average wages of male teachers (including salaries of High School teachers), per month,		$82 22
Decrease from last year,	$2 56	
Average wages of female teachers per month,		34 20
Decrease from last year,	$0 95	

Amount raised by taxation for support of Public Schools, including only wages of teachers, fuel, care of fires and school-rooms,		$4,331,675 85
Decrease for the year,	$69,222 74	
Income of funds appropriated for Public Schools at the option of the towns, as surplus revenue and tax on dogs,		59,229 01
Increase for the year,	$2,496 84	
Voluntary contributions of board, fuel, apparatus, etc., for Public Schools,		5,279 98
Decrease for the year,	$3,132 70	
Expense of superintendence by school committees, including salaries of superintendents of schools,		131,804 39
Decrease for the year,	$8,530 52	
Expense of preparing and printing school reports,		15,776 71
Decrease for the year,	$105 13	
Amount of local school funds the income of which can be legally appropriated only for the support of schools and academies,		1,898,891 19
Decrease for the year,	$22,314 54	
Income of local funds appropriated to schools and academies,		119,968 26
Decrease for the year,	$4,783 19	
Income of State School Fund paid to cities and towns in aid of Public Schools for the school year 1876–77,		76,320 07
Amount of salaries paid to superintendents of Public Schools,		54,518 42
Aggregate returned as expended on Public Schools alone, exclusive of expense of repairing and erecting school-houses, and cost of school-books,		4,620,086 01
Decrease for the year,	$85,535 17	
Sum raised by taxes, including income of funds at the option of towns, and the tax on dogs (exclusive of taxes for school edifices and superintendence), for each child in the State between five and fifteen years of age—per child,		14.81.5
Decrease for the year,	$0.00.3	
Percentage of the valuation of 1876 appropriated for Public Schools, including only wages of teachers, fuel, care of fires and school-rooms (two mills and forty-eight hundredths),		$0.00.2\frac{48}{100}$
All the towns and cities have raised by taxation the amount required by law ($3 for each person between five and fifteen), as a condition of receiving a share of the income of the State School Fund.		
Amount expended in 1876 for erecting school-houses,		586,164 13
Decrease for the year,	$278,441 43	
Amount expended in 1876 for repairing school-houses,		370,319 20
Increase for the year,	$29,102 96	
Total amount expended on school-houses in 1876,		956,483 33
Number of schools returned as High Schools,	216	
Number of teachers, 594; number of scholars,	19,160	
Amount of salaries paid to principals of High Schools,		286,765 09

Evening schools—number, 92, kept in thirty-three cities and towns; number of teachers, 445; whole number attending, males, 8,774; females, 2,755; total, 11,529. Average attendance, 5,305. Expense,	$78,350 53
Schools in Charitable and Reformatory Institutions—number, 18; number of different pupils, 1,541; average number attending during the year, 875; number under five years, 40; number over fifteen, 367; number between five and fifteen, remaining August 31, 1877, 443; number of teachers—males, 2; females, 16; wages of male teachers, per month, $50; female teachers, per month, $25; length of schools, 12 months.	
Number of incorporated academies,	44
Average number of scholars,	3,939
Aggregate tuition paid,	$131,692 99
Number of private schools and academies,	385
Estimated average attendance,	15,228
Estimated amount of tuition paid,	$439,603 11
Amount paid to maintain Public Schools—for wages, fuel, care of fires and school-rooms, repairing and erecting school-houses, supervising schools, printing reports of school committees, providing apparatus, and instruction of children in Charitable and Reformatory Institutions, etc.,	5,582,519 28
To each person in the State between five and fifteen years of age,	18 87
Percentage of valuation of 1876 (three and one-sixth mills),	0.00.3⅙

DEAF-MUTES.

Under the requirements of the Acts of 1867, chap. 311, sect. 3, I submit the following statistics of the attendance and expenses of the Massachusetts pupils in the several schools for Deaf-Mutes;—

American Asylum at Hartford, Conn.

Number of pupils during the school year 1876–7,	100
of pupils admitted the present year,	15
of pupils present January 1, 1878,	74

Clarke Institution, Northampton.

Number of pupils during the school year 1876–7,	66
of pupils admitted the present year,	20
of pupils present January 1, 1878,	72

Horace Mann School, Boston.

Number of pupils during the school year 1876–7,	73
of pupils admitted the present year,	8
of pupils present January 1, 1878,	70

Whole number in the schools, January 1, 1878,	216

In order to secure the advantages of a proper education to all the deaf-mutes within the limits of the Commonwealth, the following circular was addressed to the School Committees of the several cities and towns. But few answers have been received, indicating either that nearly all this class of unfornates have been gathered into the schools, or that there continues to be great neglect on the part of the proper authorities to seek out and send for instruction those whose condition so strongly appeals to the care and generosity of the public :—

COMMONWEALTH OF MASSACHUSETTS,
BOARD OF EDUCATION, BOSTON, Sept. –, 1877.

To the School Committee of

GENTLEMEN :—By the provisions of chap. 311, sect. 3, of the Acts of 1867, "The education of all deaf-mutes, who are now receiving, or may hereafter receive, instruction at the expense of the Commonwealth, shall be subject to the direction and supervision of the Board of Education."

It is believed there are many unfortunate children of this class scattered throughout the State, whose parents are unable to defray the expense, and are ignorant of the fact that the Commonwealth makes provision for their gratuitous education, either at the American Asylum at Hartford, the Clarke Institution at Northampton, or the Horace Mann School at Boston.

In order that none of those for whom provision is thus made, may lose its benefits, the Secretary of the Board of Education deems it his duty to call the attention of the school committees in the several cities and towns of the State to the subject, and to request very earnestly that they will ascertain and report to him, as soon as possible, if there are any children within their jurisdiction who ought to be sent to one of the institutions provided for their education.

Respectfully yours,

JOHN W. DICKINSON, *Secretary.*

I respectfully invite attention to the following extracts from the last annual reports of the institutions for the instruction of deaf-mutes, as embracing various points in connection with their education, and marking the great degree of interest manifested, and the progress made, in adopting the best and most advanced methods of instruction.

AMERICAN ASYLUM AT HARTFORD, CONN.

"The past year closes the sixth decade of the actual academic existence of the asylum. It is, however, sixty-one years ago this month, since its charter was granted by the 'governor and council, and house of representatives in general court assembled.' Four only of the sixty-three original corporators are now living. No death has occurred during the last year among corporate members, officers, teachers, or pupils of the asylum."

"The treasurer's report shows that the permanent fund of the asylum has been increased during the past year about ten thousand dollars. This gain is largely owing to two liberal legacies. That of Mr. James S. Seymour was mentioned in our last annual report, but now appears for the first time in the treasurer's account. The second was a bequest of two thousand dollars, received under the will of Miss Eliza Morrison of Peterborough, N. H. Miss Morrison was the youngest of three deaf and dumb sisters, all of whom were among the first pupils of the asylum at its opening in 1817, and all remained here until 1823. That a family so unusually afflicted should have been among the earliest to avail themselves of the first opportunity offered in America for the education of the deaf and dumb, is not strange, nor is it remarkable that they should have retained a warmer interest in the asylum than those later pupils to whom education has been a matter of course."

"The number of pupils present at the date of the last report was two hundred and seventeen. Fifty-four new pupils were admitted during the year, and six former pupils, and the whole number under instruction has been two hundred and seventy-seven. The number now present is two hundred and thirty-three, of whom, forty-three are from Maine, twenty from New Hampshire, twenty-one from Vermont, seventy-eight from Massachusetts, eight from Rhode Island, sixty-two from Connecticut, and one from Pennsylvania. The average attendance has been two hundred and thirty-one,—an increase of thirteen above that of the previous year."

"Few changes have occurred among the officers and teachers. At the close of the last term, Mr. Abel S. Clark, who for four years had had charge of the department of articulation, finding his labors too severe, relinquished them, and resumed his former position in the sign department. Mr. Clark commenced the teaching of articulation at the time of the introduction into our school of the new method of visible speech, by Professor A. Graham Bell, and his connection with this branch of instruction has been important, and his services of great value. He brought to his labors fine ability, great ingenuity, and patient devotion. The new method was thoroughly mastered by him, and has been faithfully tried among all classes and grades of pupils; its value has been justly estimated; the number who are likely to be benefited by it, and who can be profitably taught, has been determined, and the method has been systematically and intelligently applied to their instruction. The department of articulation is now well organized, and is under the charge of Miss Ada R. King, assisted by Miss Lucy S. Williams, who commenced her duties in May last. Both of these ladies were instructed by Mr. Clark, and have the benefit of his experience. Three other ladies have also learned the method from Mr. Clark, and are now using it in two of the largest deaf and dumb institutions in this country and in Montreal.

During the year, instruction in articulation and lip-reading has been given to thirty-four pupils, eighteen of whom are semi-mutes and sixteen deaf-mutes, in about the same manner as in the previous year. The present number so taught is thirty-one,—fifteen semi-mutes and sixteen deaf-mutes.

The school has been divided into fourteen classes, under the charge of the same number of teachers, and has been conducted upon the same general plan which experience has indicated to be the best. The process necessary for the education of deaf-mutes differs widely from that employed for hearing children. In the case of the latter, the effort at the outset consists largely in teaching the child to recognize upon the printed page language with which he has become more or less familiar through the ear, and afterwards to impart facts through the same familiar medium. In our common schools, the teacher's duty ends with the close of school hours, and the continued supervision of health, manners and morals, and the religious instruction, is not assigned to him, but is otherwise provided for.

In the case of the deaf-mute, he is not only destitute of language at the start, but also of most of the ideas expressed by language. His mind is in gross darkness, and his moral nature is untrained. His teacher must be for a long time the principal source of knowledge. Several years of labor must be spent before the pupil's knowledge can approximate to that of the ordinary hearing child when he enters school, and the education must then of necessity proceed under great disadvantages. As most of our deaf-mute institutions are boarding-schools, the whole care of the child during his school life is committed to his teachers; and when to the religious instruction is added that moral training which tends to form good habits and a virtuous character, the task is seen to be of no little magnitude. The end in view is not always attained; the results reached vary in different individuals; but the success has been gratifying, and probably as great as could be reasonably expected."

"An estimate of the number of deaf and dumb in the world has been recently made by Mr. William E. A. Axon of Manchester, England. By careful inquiries, the statisticians, Messrs. Behm and Wagner, have estimated the population in 1875 to be 1,396,843,000. The present number may safely be set down at fourteen hundred millions. Assuming the proportion of one deaf-mute to every 1,500 of the population at large to be correct, there are now residing in the world, 933,000 deaf-mutes, and in the United States, 26,666, and in New England, 2,325. Now if, as is usually estimated, one-third of the population are of proper school age, the number of deaf-mutes of this class in New England would be 775, of whom perhaps 400 are at school, and 375, or nearly one-half, are probably not receiving an education. The last United States census, the accuracy of which, however, has been much questioned, gives the number who are of school age in New England as 660. Although, since the American Asylum first opened its doors, it is believed that no deaf-mute applying for admission has been turned away for lack of room, still these figures are not creditable to New England, where we justly boast of our educational advantages. Even some of the Western States, with their younger institutions, can show a better record. The question how to reach the uneducated deaf-mutes is a difficult one, but it is to be hoped that more efficient means may be devised, and that more adequate provision may be made for their education."

Clarke Institution at Northampton.

"The school year just closed, having been the last under the old organization of the Clarke School at Northampton, in a single department, and the new school year having already begun, with our pupils arranged for their better instruction in two departments, it seems proper that the managers of the school should give some account, at the outset, of the purpose of the new organization, and the reasons which have induced us to enlarge the school. It will also be convenient, now that a period of ten years has passed since the first admission of pupils to the Clarke Institution, to present some facts concerning the history of the school, the number and classification of the pupils, the method of instruction, etc. We have therefore requested the principal, Miss Rogers, who has been at the head of the school ever since its establishment, to append to her annual report a list of all the pupils received, and a classification of them in certain particulars; following in this respect the excellent usage at the American Asylum in Hartford. These tables, though brief as yet, because the number of our pupils has not been large, will increase in value as the Institution grows older, and will be found even now to present some valuable information concerning the class of deaf children received here for instruction. They show, for example, that nearly half of those admitted (sixty-two out of one hundred and twenty-seven) lost their hearing before acquiring speech, and that of the remainder (sixty-five), no less than twenty-five had lost what little speech they acquired before coming under instruction. Thus only forty pupils, or less than one-third of the whole number, had any special fitness for acquiring articulation. Considering this fact, the statement of Miss Rogers becomes particularly gratifying, that the system of articulation and lip-reading has proved the best, judging by its results, 'for five-sixths of all pupils who have entered, while one-half of the remaining sixth, though considered cases of doubtful success, now employ speech and lip-reading in their homes.' Indeed, the general results of our method of instruction, for the first ten years, are to us extremely satisfactory, and better than the corporation ventured to hope when the school was opened.

"One of the main purposes of those persons who, in 1866–7, favored the establishment of such a school, was, to promote the education of deaf children at an earlier age than was then the practice. This result has been secured, not only in Massachusetts, but in other parts of the United States, and is beginning to obtain in England, where the Clarke Institution is already well known, and its example is often cited. Of our own one hundred and twenty-seven pupils, more than a fourth part were received under the age of eight years,—the limit fixed at Hartford,—and more than half were admitted before they were ten years old. We find that parents are not only willing, but anxious, to send us their children as soon as they can be admitted here. And we learn as we write, that the managers of the great Pennsylvania Institution for the deaf in Philadelphia are about to open their school for day pupils and for boarders between the ages of five and ten, induced in part by the example of the Clarke Institution.

"To give better effect to the primary instruction of our own younger pupils, we have now opened a special primary department. This, however, was hardly the main purpose of our recent enlargement of the buildings here, for there were other considerations which had much weight, one of the most important being a desire to meet the natural expectation of the people of Massachusetts, for whose benefit, mainly, the Clarke Institution was founded.

"The instruction of deaf children at this school, when it was first opened ten years ago, was necessarily, to some extent, experimental. The methods pursued by Miss Rogers in 1866–7, at the small school at Chelmsford, which, in September, 1867, became the nucleus of the Clarke School, were at that time novel in this country. It was doubted by many persons whether they would be successful with any large class of deaf children, and even if successful with some children, it was quite uncertain how large this class of pupils would be. It was not then known, although experience has since proved it, that nearly all the parents of such children would be desirous of thoroughly trying the experiment of articulation before resorting to the language of signs, and therefore it was not foreseen that there would be a constant pressure from those parents for the admission of their children to our school. This has proved to be the case, notwithstanding the opening, in 1870, of an articulation school at Boston, which now contains seventy-five pupils. In consequence of this pressure, and because it was found that the best instruction of both classes of pupils, the older as well as the younger, requires a separation between them, the corporation of the Clarke Institution decided, early in 1876, to enlarge its buildings, and to establish a primary department in Baker Hall, which was to be extended and specially arranged for that purpose. This work of construction and alteration, involving also the introducing of steam to heat all the buildings, has been going on since April, 1876, and is now, in November, 1877, so far completed that the new primary department is occupied, and the school is divided as was last year proposed. It is our intention to allow the number of pupils in the two departments to increase gradually, until it reaches a hundred or, perhaps, a hundred and twenty; and when we have one hundred pupils, it will be possible, as was intimated last year, to reduce the rate of tuition for each pupil. At present, with but little more than seventy pupils, and with the increased expenditure made necessary by the opening of the primary department, no such reduction can safely be made."

"Our pupils may enter at the age of five. As has been said in previous reports, the Clarke Institution is especially adapted for the education of semi-deaf and semi-mute pupils, although the majority of those received here have not belonged to these classes. It provides for the pupil's tuition, board, and lodging; caring also for his health, conduct, manners, and morals. The State of Massachusetts appropriates, annually, funds for the education of its deaf-mutes in this as well as in other schools. Children aided by these funds must remain members of the school until dismissed by the proper authorities. The institution also appropriates the income from its funds for the aid of beneficiaries from Massachusetts, according to their need. There are two terms in the year, of twenty weeks each; the first commencing on the third Wednesday of September, with a vacation of four weeks in winter; the second commencing on the first Wednesday in March, with a summer vacation of eight weeks. It is desirable to have all applications for admission, for the year, which begins in September, made as early as June. No pupils are admitted, except at the beginning of the year, unless they are fully qualified to enter classes already formed, and on payment of the full tuition for the term in which they enter. The institution is not an asylum, but a school of learning; and none can be admitted or retained who have not the ordinary growth and vigor of mind and body, as well as good moral habits.

"In providing two courses or grades of instruction, one for the younger and one for the older pupils, we should naturally expect to promote those who are capable of promotion, from the primary to the upper grade. But by no means all of our pupils, judging by the past, will be found capable of going through both courses. A few will need only the higher course; more will complete both; but a great many will doubtless be able only to go through the primary department, or to advance a little way in the higher studies. Nor will this be determined by age alone, nor by original mental capacity. In the primary department must necessarily be included the youngest beginners and the older children who have had no opportunity of early instruction; while in the higher department will often be found pupils younger in years than many in the grades below them. This should be understood by parents and friends at the outset; nor must they be discouraged at the slow progress which deaf pupils frequently make, under the most faithful instruction. Many deaf children can never advance very far in book-learning, and ought to give their attention early to occupations by which they can support themselves at manual labor. Some can never succeed even tolerably well in articulation; and such pupils, when old enough, ought to go to the Hartford school. Under arrangements lately made with the authorities of that school, and with the Secretary of the Board of Education, a transfer of pupils may be made, according to their ascertained fitness for either of the schools at which Massachusetts now educates her deaf children."

"During the ten years since the founding of the institution, there have been one hundred and twenty-seven pupils. Of these, ninety-two were from Massachusetts, six from Maine, six from Connecticut, four from New York, three from Vermont, three from Pennsylvania, three from Ohio, two from New Hampshire, and one each from Rhode Island, Maryland, Illinois, Indiana, Michigan, Iowa, Texas, and South Carolina. Of the ninety-two from Massachusetts, forty-five were girls and forty-seven boys; and of the thirty-five from other States, sixteen were girls and nineteen boys; making in all sixty-one girls and sixty-six boys.

"These pupils have remained different lengths of time, varying from six weeks to ten years. The average length of time is about four years. This includes ten pupils who entered a year ago and who will remain several years longer. The average time at school will probably be increased after the opening of the primary department"

Report of the Visitors.

By request of the corporation, the Clarke Institution is now more distinctly recognized by the State Board, in the appointment of visitors, whose chairman, the Rev. C. C. Hussey, makes the following report:—

"I visited the Institution the past year for the first time. All the favorable impressions received from reports were more than confirmed. Those only who visit the school, can have a full appreciation of the blessings its influences confer upon those for whom it was designed. Here, those deprived of an important physical sense are so trained, that its functions are quite well performed by those that remain.

The school is under the care of an accomplished and efficient principal, aided by a corps of well-chosen assistants. The Clarke Institution is doing a most beneficent work, and is bearing a noble testimony to the wisdom of the benefaction from which its original endowment was derived."

HORACE MANN SCHOOL AT BOSTON.

"The school having outgrown its accommodations in Pemberton Square, the city council, during the summer of 1875, in response to a request from the committee of the school 'to furnish more and better accommodations for the school for deaf-mutes,' refitted, in a satisfactory manner, an unoccupied school-building upon Warrenton Street, belonging to the city, and in September of that year the sessions of the school were opened in its present location. The building now occupied contains seven class-rooms, a reception-room, a large play-room, and has a yard in its rear. Every part is well heated by furnaces, and the means of ventilation are good."

"For a long time the older pupils of the school had objected to the name, Boston School for Deaf-Mutes, because the word 'mutes' gave a wrong impression of their condition. 'For,' said one to his teacher, 'we are not mutes; we can talk.' Another, writing after the school had received its present name, expressed this feeling more strongly, as follows: 'Most every morning when I enter Warrenton Street, I see men and ladies reading the sign on our school-door, and I do not like to have them read it. When they come to read it again, they will think this school has moved and another school moved here, and then they will not think we are deaf scholars, if we do not make any signs going or coming to school.'

"Some of the teachers were in sympathy with this objection, and an effort was made to secure a change of name. At a meeting of the Boston school committee, May 8, 1877, the following order was passed: 'That the School for Deaf-Mutes be hereafter called the Horace Mann School for the Deaf.'

"In one of his annual reports (1843), as Secretary of the Massachusetts Board of Education, Mr. Mann described the German method of teaching articulation to the deaf, and urged its adoption in this country. In the language of Dr. Howe, when addressing a committee of the State Legislature upon the importance of providing this method of instruction for its deaf wards, 'it took twenty years for this suggestion of Mr. Mann to bear fruit'; but its importance is now universally admitted, and it seems eminently fitting to associate with this school, sustained in part by State funds, the name which it now bears; since it is included in the public-school system of the State of Massachusetts, for the improvement of which Mr. Mann labored so earnestly, and is organized with reference to a system of instruction the benefits of which he made known to this community.

"*Classification and Studies of the Different Classes.*—The number of pupils belonging to the school in June, 1877, was sixty-eight,—thirty-six girls and thirty-two boys. The plan of separating pupils who have never heard, from those made deaf by disease, is continued as far as is practicable.

"The older girls who constituted the first class at the time of the last report had lost hearing after learning to speak, and their advantages before entering the school placed them far in advance of the class next below them. These girls have now finished their school education, and there are at present no pupils in the school who have been under instruction long enough to take the studies which properly belong to a first class.

"There are fifteen pupils taking the studies of the second class, which is divided into two sections. Seven of the older and more advanced pupils constitute the first section, and are studying history, geography, grammar, and arithmetic. Weekly exercises are required in composition, or letter-writing. Lessons in drawing and writing are given upon alternate days."

"The pupils of the second section study geography, arithmetic, both mental and written, and read aloud with their teacher the history of the United States. Compositions in the form of letters, stories written from memory, or journal-writing, form a part of their daily work. These pupils receive instruction in writing and drawing with the first section."

"The congenitally deaf pupils are divided into four classes. The highest of these ranks as the third class, and the studies are written and mental arithmetic and geography. Lessons in the history of the United States, and from Swinton's Language Lessons, are given by the teacher. Writing and drawing are taught upon alternate days. Compositions in the form of letters are required every week."

"In the third and fourth classes the lessons in language and mental arithmetic, and portions of the lessons in geography, are given orally.

"The studies of the fourth class are mental and written arithmetic and geography. Lessons in language are taught by objects and by pictures. Letter and journal writing constitutes a part of the regular work.

"Prof. A. Melville Bell's System of Visible Speech is employed throughout the school as an aid in teaching articulation. In this class especially, which has been trained since the introduction of his method, may be seen its peculiar advantages. Reading aloud from the printed page is one of the regular exercises of this class and of all the higher classes."

"In the fifth and sixth classes the time of the pupils is nearly equally divided between articulation and the acquisition of written language.

"The pupils of the fifth class are now beginning to use speech associated with written words, but the daily drill upon the vowel and consonant elements, with combinations of the same, forms an important part of their work. They have lessons in number, preparatory lessons in geography, and a great variety of exercises to enable them to give, in writing, correct expressions of thought.

"The sixth class is in two divisions, which occupy separate rooms. The pupils belonging to the first division are now able to comprehend, when written, a large number of sentences, such as would be spoken to hearing children of their age. They can answer, in writing, questions beginning with What, Where, and How many, and have nearly all the elements of speech, which they are learning to combine into words.

"The children of the second division of the sixth class have been in school but a few months. The instruction to them is almost exclusively confined to articulation. Vocal exercises, the development of the elements of speech, and the combinations of vowels and consonants receive chief attention. The lessons in language are limited to the names of persons, of familiar objects and actions, and to simple directive sentences."

PERKINS INSTITUTION AND MASSACHUSETTS ASYLUM FOR THE BLIND.

The amount paid to this Institution from the treasury is $30,000 per year, with the condition that persons, sent by warrant of the Governor, as beneficiaries of the Commonwealth, are maintained and educated free of individual charge.

The quarterly report of the director, Mr. Anagnos, shows the attendance for the quarter ending October 31, 1877—

	Total.	Males.	Females.
Number at the close of the last quarter,	155	87	68
Received during the quarter,	11	6	5
Discharged during the quarter,	166	93	73
Whole number during the quarter,	4	–	4
Average number during the quarter,	162	93	69
Present number,	160	93	67

I entered upon the duties of my office as Secretary in May last. It will not be expected, therefore, that in this report, all those topics demanding the attention of the Board will be discussed, nor that any plan pertaining to our general educational affairs will be developed with the wisdom which experience adds to our first judgments.

Although the topics of school education, and the condition of the schools in the Commonwealth, are neither of them new subjects of thought to me, yet both present themselves in new relations, and the relations are such as require the most careful consideration before any plan of action is chosen, or any means of executing the plan is attempted to be used. There are some principles of education, however, which have been discovered by reason, and verified by experience, which, with proper adaptation of materials, may be built upon without fear of wasting either time or strength, or without a risk of failing to secure the great end for which systems of instruction are established. With these principles in mind, I will endeavor to suggest some changes in our school system which may safely be made, and which the progress of the age seems to require. No subject of public concern is attracting more attention at the present time than our public schools, for it is generally understood that public prosperity is one of the natural products of a good system of public instruction.

Four conditions are necessary to a good school system.

First. An educated supervision of all the schools.

Second. Thoroughly trained teachers.

Third. An effective law, compelling the attendance of the whole school population upon the schools for the time the schools are required by law to be kept.

Fourth. A sufficient amount of funds to enable school authorities to employ the best talent in teaching, and to obtain the best means for the teachers to use.

The first condition would be supplied by the authorized appointment of a sufficient number of school superintendents to supervise the schools. The second condition would be provided for by placing over the schools, teachers who have had a professional training in our Normal or training schools, or who have trained themselves by observation and experience. Any attempt to reform the school-teaching in the State, that does not begin with the employment of skilled teachers, will prove a failure. The third condition would be secured by the passage of an act, so simple that it may be understood, and so practical that it may be applied, compelling the attendance of pupils of school age upon the public schools, or upon schools approved by the school committee, and for that time yearly required by the law relating to time of attendance. If the parent is unable to send his child to school, then provision should be made for sending him at public expense. The life of the State depends upon making education universal, and free, and compulsory.

The fourth condition is to be established by means of private munificence, by local taxation, and by State aid.

Private munificence is generally associated with private control. Some of our private schools are an honor to their founders, and a very great blessing to the State. Others either serve to lower the standard of public instruction, or they furnish the means by which a few can be educated apart from the many, —a condition of things not wholly safe in a Republic. The schools of the cities and large towns can be easily supported from the revenue arising from local taxation; but the schools of the smaller country towns cannot be well supported in this manner without imposing burdens too heavy to be borne. Such towns need, and must have, help from the State. This they now have to some degree, but the aid is less to each pupil than it was; and as the population increases, unless new sources of aid shall be devised, it will continue to grow less in the future.

I desire, in this connection, to call your attention to the present condition of the—

MASSACHUSETTS SCHOOL FUND.

Investments, December 21, 1877.

	Note.	Per ct.
Quincy,	$20,000	6½
Newton,	46,000	6½
Marshfield,	30,000	6
Roxbury,	20,000	5½
Templeton,	10,000	6½
Westborough,	24,000	6
Chelsea	75,000	6
Reading,	10,000	6½
Beverly,	30,000	6
Dudley,	6,000	4
Malden,	15,000	3½
Essex,	4,000	4
Co. of Hampshire,	14,000	5
Woburn bonds,	22,000	6
Adams bonds,	40,700	6
Williamstown bds.,	32,500	6
	$510,867	
Hopkinton,	$6,000	6½
Chelsea,	25,000	7
Holden,	15,000	6½
Enfield,	14,000	6½
Orange,	25,000	6½
Dana,	4,467	6½
Revere,	7,500	7
Needham,	10,000	3
Easthampton,	5,000	5½
Mass., T. & G. R. R. bonds,	311,000	5
Mass. Back Bay bds.,	38,000	5
Mass. Union, bonds,	20,000	5
State of Maine, bds.,	9,600	6
	$378,600	
Boston & Albany R. R. stock, 11,124 shares,	$1,140,225 25	
Cash invested,	38,098 29	3
	$2,067,790 54	

HISTORY OF THE FUND.

The Massachusetts School Fund was established by the legislative Acts of 1834, chap. 169, providing that "all moneys in the treasury derived from the sale of lands in the State of Maine, and from the claims of the State on the government of the United States for military services, and not otherwise appropriated, together with fifty per centum of all moneys thereafter to be received from the sale of lands in Maine, shall be appropriated to constitute a permanent fund for the aid and encouragement of common schools: *provided*, that said fund shall never exceed one million dollars."

The method of the distribution of the income of this fund was provided for by the Legislature of 1835, which method was amended by the Legislature of 1839, and again, subsequently, by the Legislatures of 1846 and 1849.

In 1854 (chap. 300) an important act was passed, providing for the increase of the fund by the transfer "of such a number of the shares held by the Commonwealth in the Western Railroad Corporation, as will, at the rate of one hundred dollars a share, increase the principal of said fund to the amount of one million five hundred thousand dollars." This act also provides for the distribution of one-half of the annual income of said fund, to "the use and support of common schools," and for appropriating the other half to general "educational purposes." It also provided that "in case said half (the last mentioned) of said annual income shall in any year exceed the sums so drawn from the treasury in such year, the surplus shall be carried to the account of the principal of said fund, and added thereto, until said principal shall amount to the sum of two million dollars."

Again, by chap. 154 of the Acts of 1859, it was provided in sect. 3 that "all the avails of the moiety of the sales of public lands, which by the provisions of the seventeenth chapter of the resolves of the year one thousand eight hundred and fifty-seven, inure immediately to the use of the Commonwealth, and the disposition of which is not otherwise provided for in this act, shall be added to the principal of the Massachusetts School Fund."

Provision was thus made for the indefinite enlargement of the amount which the common schools would annually receive from the treasury of the State. Had this legislation been permitted to stand, the school fund would have been increased to the sum of five million of dollars, and thus the Commonwealth would have stood foremost in the Union in the provisions made for the free and impartial education of her children.

Up to this period, the legislation of the State had been liberal and generous to the common schools, and to the general educational interests of the Commonwealth. The first adverse act was in 1861, when the sum of $232,790 was diverted from the fund by the gift of land in the Back Bay to the Massachusetts Institute of Technology, and the Boston Society of Natural History,—the fund which had been solemnly set apart and pledged for the support of the schools, and for general educational purposes.

But under the exigency of the case, and the necessity of providing means for the payment of the large sums raised by the State for the recruiting and sending forward troops, in 1864, chap. 313, the Legislature created a fund by the issue of State scrip, not exceeding ten million dollars, to be called the Massachusetts Bounty Fund, and created a sinking fund for the payment. Towards this sinking fund, the Legislature appropriated all the receipts from the sales of the Back Bay lands, less the expense of commissioners, and of filling and preparing the lands for sale, *including the portion now by law made payable to the Massachusetts School Fund, as soon as said school fund shall have reached the sum of $2,000,000.* The whole amount paid under this statute into the School Fund was $456,930.06, "or less than fifteen per cent. of the estimated profits of the enterprise."

Thus no provision has been made for the increase of the School Fund to meet the natural growth of the population, and the increasing demand which must of necessity be made for the support of our educational institutions. And Massachusetts must, in some way, increase her School Fund, if she desires to keep pace with her sister States in the higher education demanded by the spirit of the times, and the progress of the age.

School Supervision.

The care of our public schools is committed to public officers called school committees, chosen by the towns but controlled by the State.

These school officers are authorized and required to select the teachers of the schools; to determine whether those selected have the physical, literary, and moral ability to perform well all the duties pertaining to the schools they are to teach; to make out a course of studies for all grades of pupils properly belonging to the Public Schools; to establish the methods of teaching in accordance with which the studies are to be taught; to direct what text-books shall be used; to determine what form of school government shall be employed, and to provide all necessary means of teaching.

In general, the school committees of the Commonwealth are doing their work as well as their preparation for it, and their time for it, will permit. The nature and the amount of the duties peculiar to their office are so complicated and so great, that they almost always excite in the minds of those upon whom they rest a deep feeling of responsibility, and sometimes a consciousness of inability to do all that ought to be done.

The same natural qualities, and the same acquisitions that constitute a good instructor, are necessary to make a good committee-man. Among the most important acts he has to perform are those of selecting and examining teachers for the schools. The ability to examine a teacher properly implies a knowledge of the requisites a teacher should possess, and no one can really be said to know these requisites, unless he himself possesses them.

Before a teacher is permitted to enter our schools, he should be carefully examined with reference to his physical health, his manners and general culture, his knowledge of what he is to teach, his mode of teaching, his ideas of school government, and especially with reference to his morals. As the teacher is to stamp his own mental and moral image on the minds of his pupils, it is of the utmost importance that he shall be as nearly perfect as possible. The Commissioner of Common Schools of the State of Ohio, in his Twenty-third Annual Report, says: "The securing of persons to teach in the Public Schools of the State is no unimportant matter. It is not simply a question whether or not the public money shall be wasted on incompetent employés. A school under the control of an incompetent, inefficient, immoral, or coarse teacher is productive of more evil in a community than would result from having no school provision whatever." The Secretary of State of Ohio, Hon. Samuel Galloway, says: "It is well known that, in many places, examinations are a burlesque upon the name, and that scores of men are licensed to teach, because they are unqualified for any other employment by which they could gain a livelihood, and hence a license is given as the cheapest and most convenient mode of dispensing charity to their infirmities."

The examination of a teacher is always more or less of a farce, unless the examiner is either a teacher, or one who knows by experience what it is to teach. All examinations, except those of school-teachers, are conducted by those who are masters of that concerning which they examine. A candidate for the ministry is never to be introduced to the duties of his sacred office, except through an examination conducted by members of his own profession. It requires an organization of trained physicians to examine and commission a student of medicine, and an organization of trained lawyers to commission a student of the law, before they have the right to practice their professions. Indeed, neither the young minister, nor lawyer, nor doctor would submit to an examination made by any but masters of the knowledge to be tested by the examination, and the public would properly refuse to employ them, unless they had been commissioned to their work by a competent authority.

In some towns there is no personal examination of teachers by the school committee, letters of recommendation taking its place. Any candidate who may happen to have a goodly number of these letters will stand a good chance of obtaining a situation to teach. The evidence frequently found in recommendations, establishes no more than the fact that the bearer has personal friends who are anxious to do him a favor. From the fact that teachers are admitted to the schools without giving evidence of their fitness to teach, we have many who are lowering the standard of public instruction, and who are abusing the young whose destiny is in a measure committed to their care.

In addition to the examination of teachers, the committees are to make out courses of study for the schools, and to establish methods of teaching. To do these things well requires learning, and experience, and time. After the schools are in successful operation, they should be subjected to a careful and constant supervision, or some of the teachers, through ignorance or inexperience, or neglect, or opposition, will fail of conducting their labors to any good results.

The leading educators of all countries are agreed in this, "that no system of public schools can reach a high degree of efficiency without close and constant supervision by competent officers." "So strikingly true is it, indeed, that if informed of the character of the supervision exercised over the schools of a country, one acquainted with the subject can readily describe the condition of the schools." Cousin, in his admirable report to the French government, as long ago as 1836, after explaining the system of inspection in the Netherlands, says: "It is enough to say in praise of it, that it has made the schools of the Netherlands among the best, if not *the* best, in the world."

In the annual report of the Secretary of State of Ohio, for the year 1849, the Hon. Samuel Galloway, previously quoted, says of county superintendency: "Although this subject has again and again been presented to the attention and consideration of the people, its paramount importance will justify line upon line, and precept upon precept, until its general adoption." And again: "No one who knows by observation and experience the operations and results of this measure, questions its beneficial influence. In all places of our Union where it has been tested, the expectations of its utility have been realized; order, regularity, energy, systematic action, and permanent progress are the monuments which mark educational movement wherever this instrumentality has been used. School systems which had been dormant for years, or which move but with the sluggishness of a languishing existence, after being vitalized with the power of a vigorous superintendency, have risen as if from the grave, and manifested the evidence of a new and nobler life. The single result, aside from all others, of securing a rigid examination of candidates to teach, and thus furnishing competent men for that responsible post, ought to commend the measure to public patronage."

When we take into account the amount of money raised for the support of our Common Schools, we can at once see how important it is, even in an economic sense, that such arrangements shall be made as will secure a judicious expenditure of this money. School funds are not unfrequently wasted in the erection of costly school-buildings, that, notwithstanding their cost, are poorly adapted to the purposes for which they were intended. On the other hand, money is wasted by attempting to carry on school affairs in dilapidated houses, devoid of beauty, comfort, and convenience; in buildings that are so constructed, and are in such a condition, as to render it impossible for the teacher to produce the best results. Such structures are the occasion for loss of health, by subjecting teachers and pupils to the evil influences of bad air, improper temperature, and an unfavorable light.

Money is wasted, also, in maintaining schools containing no more than two or three or even ten pupils; in the employment of incompetent teachers; in allowing courses of studies to be taught to children, whose ages and acquirements render them unable to comprehend or profit by the teaching; in neglecting to grade the schools so that there may be a proper division of labor in them; in a refusal to supply apparatus and means necessary to illustrate the topics taught; in attempting to carry on the schools, and at the same time failing to establish the very conditions necessary to success.

The employment of an experienced, intelligent leader, responsible for results, is as necessary in school affairs, as it is, and is, acknowledged to be, in all other organizations and occupations; a leader who shall spend all his time and strength in looking after the interests of the schools, and who shall be constantly devising new means for their improvement, so that there may be an adequate return for what is expended.

As a fact, all our city and village schools that are under intelligent and thorough supervision, are incomparably more efficient than those of the country, without the supervision. How then can the country schools be provided with supervision, so that they may become as efficient as the schools of the cities? An intelligent and satisfactory answer to this question requires extensive knowledge and long experience. Without submitting the details of a plan, or even the plan itself, with an idea that it is the best that can be devised, I will suggest one that at least may serve as a guide in thinking for another that is better.

The first question that arises, is, What should be the extent of territory or the number of schools included under one superintendency? As the political divisions now existing are town, county, State, and as we already have town and State school officers, the missing link would be supplied by introducing an officer who should have supervision of the schools of the county.

Second, What number of superintendents would be required? There are at present 5,556 Common Schools in the State; of this number 1,860 are already provided with superintendents. Leaving out of account this number, there will remain 3,696 schools, chiefly in the country and suburban towns, to be provided for. Allowing two hundred schools to each superintendent, there would be required eighteen superintendents for the State. A majority of the counties would require one superintendent each. Some of the smaller counties might unite under one superintendent, while some of the larger counties would need two or three.

Third, How could these officers be elected? Every school board in the several towns of a county may choose one of their number, and the persons so chosen might form a county committee, with power to choose a county superintendent, and fix his salary.

Fourth, How could this superintendent be paid? Three ways suggest themselves: (1) As the office is a county office, it could be supported by a small county tax; (2) As the burdens arising from the support of our educational institutions should be borne by the proceeds of a just and equal taxation, superintendents might be supported in part at least by the State; (3) In case the school committees of the country towns would consent to serve as the city committees now serve, the cost of supporting a sufficient number of superintendents who should give all their time to the schools would be considerably less than the present cost of superintendence by committees, who, in general, give but an indefinite and irregular portion of their time to school work. The amount in the aggregate paid to the committees for 1877 was $77,285; after paying to each of these superintendents a competent salary from this amount, there would be a large surplus saved to the towns. If it should be necessary, as of course it would be, to pay the expenses of school committees, with special fees for special service, financially the towns would still be gainers by the proposed arrangement.

Great care should be taken that skilled, and efficient, and reliable men be appointed to fill the office of superintendent. It would be of vital importance, also, that the superintendents remain as permanent as possible in their places. To secure these ends the office should be free from political influence; the mode of election recommended above would remove the office from the disturbing influences of party strife.

To guard against a multitude of applications of unqualified aspirants for the office, and to aid the county committee in selecting good men for superintendents, the applicant, that he may be eligible, should be required to hold a certificate from the State Board of Education, indicating that they, by a personal examination, have evidence that the bearer possesses scholarship and experience requisite for a successful superintendent of the Common Schools of the State. The certificate should be signed by the examining committee of the Board, of which the Secretary of the Board should be a member.

The duties of the county superintendent should be similar to those of the superintendents of the city schools.

Our Legislature could not secure for the State a greater good than would result from the passage of an act authorizing and requiring the appointment of county superintendents, who shall be the agents of the school committees of the county, and exercise over the schools the same intelligent supervision as is now exercised by city superintendents. Not less than twenty States of the Union have incorporated county or district superintendency into their system of Public Schools, and in all cases with good results. I would therefore call the attention of this Board to the subject, and would recommend that they ask for such legislation as is necessary to establish a system of supervision over all the schools of the Commonwealth not now provided with superintendents.

MEETINGS OF SCHOOL COMMITTEES.

During the summer and fall, meetings of school committees were held in the counties of Hampshire, Norfolk, Franklin, Worcester, Essex, and Hampden. With the co-operation of the committees, it is proposed to hold similar meetings in all the counties, and to form permanent organizations of these school officers throughout the State.

The calls for these meetings were issued by the agents of the Board of Education, after conferring with the school committees in the several counties; but the meetings, and the organizations growing out of them, have been officered and controlled by the school committees themselves. The principal motive for calling these meetings was prompted by the important duties devolved upon the school committees. No officers in the State have more important functions, and upon none are powers conferred with fewer limitations.

Teachers' associations have been held in this State, annually and semi-annually, for about fifty years. Through these associations the profoundest educators have given their most thoughtful views upon the great problems of education, to the humblest teachers, and many practical questions have here found a solution. Teachers' institutes, illustrative of methods of teaching, and conducted by educational experts, have had an existence for nearly as long a period of time. Of these means of improvement, a large number of teachers have availed themselves. Educational journals have been sustained for upwards of thirty years, mainly by the contributions of teachers in daily practice of the methods described. The establishment of Normal Schools dates back about forty years. During this period large numbers of teachers employed in the schools have had special training for their work. Large contributions have been made to teaching as a science, and to the appliances in aid of the art. Teachers to a greater or less extent have acquired this accumulated knowledge. Yet, to the present year, in this Commonwealth, no convention of school committees had ever once been called to consult upon the duties of their important office.

On the one hand, the teachers of the State, through the influence of their conventions, have been constantly stimulated to more intelligent work. While on the other, the school committees, for lack of such stimulus, have in too many cases looked with indifference upon all proposed changes in school management. For this reason, many an enthusiastic teacher has withdrawn in discouragement from a profession he was fitted to adorn, or, what is still worse, has remained to practice routine methods and stultifying processes. Such considerations furnished an additional motive for trying to concentrate scattered forces upon the ends to be aimed at in the maintenance of the schools.

The method of conducting the meetings has been simple. In the calls for them, the following general question was proposed for discussion, "How can the efficiency of the Common Schools be increased?" Sub-topics were embraced under this general head. At several of these meetings, the Secretary of the Board was requested to give his views upon the course of studies for ungraded schools. These views led to questions and remarks by the committees, showing the peculiar difficulties under which this class of schools labors, and presenting the occasion for many practical suggestions affecting them. The meetings have been earnest, familiar, and eminently practical in their whole conduct. The topics mainly discussed were school supervision; powers and duties of committees, especially with regard to truancy; the examination and certificating of teachers; and courses of studies. The several branches of study, drawing in particular, received considerable attention.

Such, in brief, is the work to which these meetings have been devoted. This new measure in the interest of the Common Schools was brought to the notice of school committees early in May of the present year, by the agents of the Board in their visits to the towns; it met with a hearty response, and the first meeting was called at Belchertown, in Hampshire County, on the 16th of June. Prof. W. B. Graves of the Agricultural College, Amherst, was the presiding officer at this meeting. The second meeting was of the committees of Norfolk County; it was held at Boston, July 6, and was presided over by John Quincy Adams, Esq., of Quincy. The third meeting was of the committees of Franklin County, and the northwestern part of Worcester; it was held at Athol, September 7, and resulted in the formation of an association having for its president Rev. Lyman Clark of Petersham. The fourth was held at Bradford, Essex County, October 10; the session was presided over by Hon. William Cogswell. The fifth organization was formed in Hampden County. The first meeting of this association was held at Holyoke, October 30, and was presided over by Dr. Samuel Alvord of Chicopee.

The measure has thus far resulted in the organization of school committee associations in four of the counties. In all, nine meetings have been held; these meetings have not all been large, though in two instances nearly every town notified was represented by one or more members of its school board. A course of studies was adopted by the Eastern Hampshire Association, which is the guide so far as is practicable, for all the schools of that section. This course has been widely distributed throughout the State, and while it must be employed with modifications to meet the circumstances of particular schools and teachers, it admits of extended application to the schools of all parts of the State, and must be an aid in guiding teachers to unity of plan in their work. The course, with slight changes, will be found appended to this report [Appendix A]. Resolutions were passed at several of these meetings advising the attendance of all teachers upon the teachers' institutes, held within reasonable distance, and with this was coupled the recommendation that the pay of the teachers should be continued during the time of such attendance.

The following resolution was passed at the Norfolk County meeting, held July 6: —

"*Whereas*, The expenditures of the towns of Norfolk County, on account of their schools, are now heavy, and the results obtained admit, in our opinion, of very considerable improvement,—

"*Resolved*, That we suggest to the State Board of Education, and to the school committees of other counties, the expediency of carefully considering whether a system of county or district supervision, by trained specialists, could not be devised, which in practice might be made productive of most beneficial results."

At the meeting held October 12, the following resolutions were adopted: —

"*Resolved*, That a committee of five be appointed to consider and report to this association, at a future meeting, upon the desirability of adopting a standard course of study for the Grammar and Primary Schools of Norfolk County, and after consulting with the State Board of Education, to prepare a scheme of such a course for the consideration of this association"; also,—

"*Resolved*, That a committee of five be appointed to consider and report upon the expediency of establishing a Truant School for Norfolk County."

The resolutions passed at the Franklin County meeting were as follows: —

"*Resolved*, That it is the sense of this meeting that the examination of teachers should be under county or section supervision

"*Resolved*, That the school committees of the several towns, while their schools are in session, should encourage the teachers to attend institutes held within convenient distance, allowing them the same compensation as though in school."

A petition to the Legislature for the establishment of the office of section or county superintendents was submitted and signed by committees in attendance. The following is a copy of the petition :—

> " *To the Senate and House of Representatives of the State of Massachusetts.*
>
> "We, the undersigned, school officers of the State, respectfully petition your honorable bodies to enact a law providing for the division of the State into sections, with the appointment of one or more school superintendents, whose duty it shall be to superintend the educational work of the public schools of the section, certificate teachers, and in all practicable ways aid the local school committees."

The Hampden County Association is urging upon the county commissioners the establishment of a school for the guardianship and instruction of truants of that county. These are some of the evident results of these meetings. But above all else accomplished by the school committee meetings, are to be placed the sympathy which was enlisted by these familiar interviews of men moved by kindred motives in a common interest, and the increased zeal with which they will apply themselves to progressive school-work.

Principles of Teaching.

All are agreed that the schools are not producing the best results of which they are capable. We may say this, and not pass any severe criticism upon those who have up to this time managed our school affairs. The schools are better than they were, and doubtless they have been improving from the time they were first organized in this country. Perhaps it would be safe and fair to admit that they have always been as good as possible under existing circumstances.

I do not believe that any teachers more faithful will ever live in the future than have lived in the past, or are living now. Common-school instruction, like everything else, is making progress, and those who live in the present can avail themselves of an experience that did not exist in the past, and with its aid they can lay hold of what was never attainable before. Not all the criticisms passed upon our schools are either intelligent or just, yet, if they are made in a good spirit, they express an increasing interest in the most important institutions of the Commonwealth.

Some think the knowledge now taught and acquired is not practical knowledge, meaning by the term practical, that knowledge which can be used in producing the means of supporting our physical lives. This criticism should be carefully examined before we accept it, for it suggests at once the propriety and necessity of changing our courses of study, by rejecting from them everything that does not offer to the student what is generally known as essential information. If the suggestion is observed, all attempts to secure symmetrical development as the result of school life will disappear, and the child will no longer be considered as an end unto himself, but something to be made into a skilful instrument for the production of something outside himself.

On account of the important results that would follow the acceptance of the criticism, it should be subjected to a careful examination, and the examination will make it appear that there is no such thing as practical knowledge. Teach a pupil all knowledge, and unless his mind is trained, nothing practical will exist. That which is named by the term practical is a condition of the mind, and not an attribute of the knowledge the mind may acquire. The reason why some men do well whatever they are called to do, and behave well on all occasions, is not because they know so much, but because they have good sense, and their active powers have been trained.

The ability to comprehend truth is one thing, the power to discover it is another. It is one thing to understand the plan in accordance with which things are made, and quite another to produce the things themselves. The passive powers are active in receiving, the active in producing effects. The passive powers of a pupil are called into activity when the teacher performs a problem for him, the active powers when the teacher, having taught the principles upon which the solution depends, requires the pupil to solve the problem for himself. The passive powers only are stimulated to activity by such a use of books as leads the student simply to comprehend the ideas another mind has invented; the active powers exert their energy when, by a study of the real objects of thought, instead of a verbal description of them, they invent their own ideas. Before the child enters the school he is in constant contact with things. He learns of things by an observation of the things themselves. He acquires the power of producing something by producing it. He learns his language even by using it, but when he enters the school-room he is at once shut away from all contact with what should be the real object of his thoughts, and from all opportunity of producing anything either useful or beautiful; so that when he leaves the school for the activities of real life he is unprepared to do what real life requires to be done, and men say that he has no practical knowledge.

The work done in the schools will become practical, when it results in training the minds of the pupils so that they will find the source of activity within themselves. This will be done by a correct method of teaching. Words found in the books are good for nothing in teaching except to call the mind of the learner to the study of the things signified. The longest and most thorough courses of study now taught in our schools cannot furnish an opportunity to the student of acquiring a knowledge of many facts, so that, if all that is obtained by study is a knowledge of the facts taught, the results of school life will be poor enough. On the contrary, if the schools furnish the occasion for right training, and for a true method of study, then the pupil will graduate from even a short term at school with the power of self-control and a method of study that will make it possible for him to learn and to do all that his plans of life will render necessary or even desirable.

Language, the elements of all the sciences, and the sciences themselves, should be taught in accordance with one and the same method. Elementary knowledge, or facts, should be taught by presenting the objects with which the facts are found connected. If the facts are of external objects, then these objects or their representatives should be presented. If they are of internal objects, as thoughts or states of mind, then the thoughts or states should be presented by awakening them in the mind of the learner, and in that way it is the duty of the teacher to make the pupil conscious of that which he would have him learn. Scientific knowledge is taught objectively by leading the pupil at a proper time to be again conscious, through the activity of his memory, of the facts he has before gained by observation, and then teaching him to classify.

Another criticism made upon our schools, which is quite common, especially in these last days, relates to the amount taught and attempted to be learned. The advice is to teach less in quantity, and more thoroughly. The attempt teachers have made to teach thoroughly has led them to introduce many topics into the schools. If, for instance, one teaches geography thoroughly, he must teach something of mineralogy, and geology, and meteorology, and zoölogy, and botany, and geometry, and chemistry, and ancient and modern history, or else some geographical question may be asked, the pupil in geography cannot answer. If reading is thoroughly taught, there will be included in the teaching all that which is described in the reading-lesson. Too much is not taught in the schools, but too many topics may be introduced at one time, and they may be too rapidly taught.

Educators themselves do not agree in their judgments concerning the methods of teaching, nor do they agree concerning the results the schools should produce. Until there is an agreement concerning what is essential, there can be no permanent progress in the great work of instruction; for what one builds up another will tear down, what one approves another with equal reason will condemn. So that when one searches for reliable authority to guide in his work, he will find it nowhere, except he himself may chance to know enough and have experience enough to find it among the results of his own independent thinking. From what has been said, it will appear that a necessity exists for a general assent to the principles of teaching, which being discovered and systematically arranged, will constitute the science of teaching. The principles of the science are to be discovered by a study of the human mind, the development of which is the true end to be sought by all that is done in the schools.

The first principle of teaching may be stated as follows: All topics should be taught objectively, by bringing into the presence of the mind the actual objects and subjects of study, or by bringing before the mind as complete illustrations as possible of them. By the term objects are meant physical things, or those things which are external. By the term subjects is meant mental things, or those which are internal, such as thoughts and mental states, and the sciences. An object is in the presence of the mind when it holds such a relation that the mind perceives the object. A subject is presented by awakening in the mind those thoughts or mental states, or that knowledge which constitutes the subject of which the teacher desires the pupil to become conscious. All teaching is objective that succeeds in bringing the object or subject of thought before the mind for its consideration. The more teachers study their art, and understand it, the more inclined they are to teach by bringing into the presence of their pupils the objects to be studied. The principle here illustrated is violated whenever the teacher employs words as substitutes for that which the words describe.

Another principle of teaching is, objects and subjects should be taught first as wholes. The principle is violated when the alphabet is taught as a step toward reading, or when the teacher attempts to teach geography proper, by leading the pupil to combine his knowledge of the school-yard, the town, and the county into a knowledge of the earth. Parts can never be parts to the learner before he knows the whole of which they are parts. An object is taught when that is taught which is expressed by a name. A subject is thus taught when the teaching prepares the mind for a definition.

A third principle of teaching arises from the relations elementary holds to scientific knowledge. The first is a knowledge of facts pertaining to individual things. The second is of classes, and is general knowledge. A knowledge of classes depends upon a knowledge of individuals; hence the necessity of an elementary course of studies that shall precede its corresponding scientific course. The study of arithmetic should be preceded by a systematic study of numbers; the study of grammar by a study of language; a knowledge of astronomy should grow out of the changes observed in the heavenly bodies; a knowledge of botany out of a knowledge of individual plants; and a knowledge of every science out of a knowledge of those facts that the science requires to be generalized and combined. In this country, there is not yet to be found in any of the schools a systematic course of elementary teaching.

The application of the first principle of teaching calls attention to what must be done to awaken such activity in the mind of the pupil as leads to knowledge and development. It forbids the use of signs, before that which is signified by them has been known either in itself or in its kind. The second principle determines what is a proper method of teaching these objects. It requires the whole to be taught before its parts,—individual wholes to young pupils, and class wholes to those pursuing the sciences. The third principle requires a systematic teaching of the facts for that knowledge which suggests and is the foundation of scientific knowledge. The first step, then, to be taken towards a true and permanent reform in teaching, is to establish a science upon which teaching as an art may be founded. An intelligent application of an art implies a knowledge of the end to be secured. What end shall we choose for our schools to strive for? The end to be chosen is either information, or it is training with information attached, and holding the relation of means to an end.

The schools are for the good of the individual and for the stability of the State. It has been already shown that training is necessary, that the individual may live a successful life. It may also be shown, that individual training is necessary to the existence of a well-ordered State. Men trained together by the same method become inclined to think alike and to hold like opinions. It is on account of the tendency men have when trained alike to think alike, that society and States become possible. It is, therefore, as much the right and the duty of the State to provide the means of training the minds of those who in the future are to constitute the State, as it is to teach useful knowledge.

The institutions of a country primarily grow out of the character of the people; but the institutions, in turn, determine the character. If we turn our attention to the history of ancient times, we shall find that the ancient States, which became either permanent or powerful, fostered those institutions whose influences laid the foundation for permanence and power. "In Persia, as all power centred in the king, the schools trained the children for the State. In China, every child was trained to obey the head of the family, and every family was trained to yield an absolute obedience to the Emperor. Sparta became one of the principal States of Greece, because the Spartan children, in accordance with an educational system established by Lycurgus, were trained to love the State and to be willing to sacrifice themselves in its defence."

Our institutions differ, it is true, from those of ancient times, and in this, ours are founded on the principle that the individual is to sustain the State, not for its own sake, but because the State is necessary to the well-being of the individual. The ancient schools gave no attention to the individual for his own sake. Our schools should consider every child an end unto himself, and they should teach that he is to give his life to the State, if necessary, because he has natural rights which he would not be capable of enjoying, nor permitted to enjoy, if it were not for that training and that protection which the State alone is able to furnish.

If we consider that the individual was created for his own sake, and that he can glorify his Creator and attain the end of his being only by a complete unfolding of his own powers, under the influences of intelligent instruction; if we believe that the State can neither be permanent or useful, except its citizens are trained alike and together in the same schools, then it will appear to be the imperative duty of the State to see to it that all her children are trained, and to provide the means and to that extent necessary for information and development.

If the educators of the country would agree to derive all their doctrines from the wants of the minds that are to be affected by them, there would soon be harmony in all that pertains to principles and methods of teaching, and all would demand that the State provide ample means for mental training as well as for communicating knowledge.

High Schools.

A course of studies to be complete must be composed of two subordinate courses, one of which may be called the elementary, the other the scientific course. The subordinate courses are distinguished by the difference between elementary and scientific knowledge to which the topics in the two courses refer. Schools in which elementary knowledge is exclusively taught are called primary or elementary; those in which scientific knowledge is taught are secondary or scientific schools. The latter when forming a part of a Public-school system are called High Schools.

High Schools exist in almost every State in the Union, forming a connecting grade between the elementary schools and the college. "No system of public education," says Huxley, "is worthy the name unless it creates a great educational ladder with one end in the gutter and the other in the university."

In some of the States pupils may pass from the High School to the College or University without any other examination than that made at the close of the High-school course.

Some think our High Schools should form no part of a system of schools supported by the State; that the State should limit itself to the support of Primary Schools. The reasons given are,—

1. That secondary instruction is not necessary to the well-being of the State.

2. Only a small portion of the school population avail themselves of the advantage of this instruction.

In answer to the first objection, it may be said that the moral and social condition of a community of persons will be degraded in proportion as the products of their labor are inadequate to supply their spiritual and material wants. The history of all people shows that the products of labor, to the laborer, will be in proportion to the skill with which he labors. Labor will be skilled or unskilled in proportion to the high or low state of public instruction, directed, first, towards general culture, and, second, towards the arts which the laborer is to apply.

The truth of these statements accords with the experience of all nations in all times. A true and general culture of the people will exalt a State by laying the foundations for virtue, and for skill in producing what will supply the wants of the body and gratify the taste. "I will thank any person," says Everett, "to tell why it is expedient and beneficial in a community, to make public provision for teaching the elements of learning and not expedient nor beneficial to make similar provision to aid the learner's progress towards the mastery of the most difficult branches of science, and the choicest refinements of literature."

It is true, that not all the pupils of the elementary schools will attend the High Schools, but the latter are open alike to all who choose to avail themselves of their advantages. There will be more educated people in every town maintaining a High School than there would be without it; and the more educated people there are, the greater will be the development of material resources, the more perfect the security of property and of persons, the higher the civilization, and the more complete the facilities for the unmolested enjoyment of all the objects of our natural rights.

Some are fond of saying that our education does not produce such results, and they point to individual cases of failure in passing some technical examination, or to some individual cases of educated dishonesty, to establish what they affirm. It may be shown that individual cases of failure to learn and to become virtuous exist, in spite of all the influences our educational institutions can exert, and not on account of the peculiar defects in them. The educating power of our Public Schools is not to be measured by its failure to mould every individual into a perfect man, but by its effects on the masses, whose general character is expressed by what the State is itself, and by what it is doing for its citizens and for the race.

A careful comparison of our present social state with that of our past will show what has been done by our schools for the social life of the people. The results of our modern education will be discovered if we turn our attention to the increased number and nobler character of our charitable institutions; to the wonderful changes that modern ideas have wrought in the construction of our prisons and houses of correction, and in the treatment of criminals; to the increased earnestness manifested everywhere in establishing institutions that have for their object the reformation of the victims of bad habits; to the increase of intelligence and good taste pertaining to industrial and art education; to the universal interest now shown in the improvement of our Common Schools, in respect to their courses of study and to their methods of teaching; to the security everywhere felt on account of the strength and integrity of our government, and to the ability the people now have of thinking for themselves on all questions of individual or public concern.

A further argument in favor of maintaining High Schools at the public expense may be made in showing, first, that they serve to give increased efficiency to the elementary schools below them. From the fact that the higher education is within the reach of *all*, pupils in the lower schools are stimulated to remain in them until they have learned all that is required to be known, and have obtained all the discipline of mind required as a preparation for High-school work. "Experience has proved," says Mr. Fras. Adams, "that elementary education flourishes most where the provision for higher education is most ample. If the elementary schools of Germany are the best in the world, it is owing in a great measure to the fact that the higher schools are accessible to all classes.

In England, not only have the aims of the elementary schools been low and narrow, but an impassable gulf has separated the people's schools from the higher schools of the country. In the United States the Common Schools have always produced the best results where the means of higher education have been the most plentiful."

The influence of one grade of schools upon another grade is from above downward, in so far as courses of study, amount of work done, and methods of teaching are concerned; it is from below upward, just in proportion as that from above downward has succeeded in leading the elementary schools to prepare their pupils thoroughly for higher courses of study.

By the standard they establish for admission to their classes, and the opportunities they offer for a higher education, the High Schools determine what the lower schools shall do, and they everywhere stimulate pupils to remain in the lower schools until what is required has been accomplished. Again, the lower schools, on account of the age and attainments of their pupils, can teach elementary knowledge only. If the High School is taken away, the opportunity for obtaining free instruction in scientific knowledge is taken away also.

The elementary and the scientific course are parts of one whole. No system of schools would be complete without both these courses. A knowledge of facts is of little utility, except as it lays the foundation for a knowledge of general principles. Every pupil in our Public Schools should be taught a method of thinking and acting. This is of more consequence than any other acquisition that can be made; for with a good method of study and the training gained by the activity exerted in acquiring the method, the student after he leaves school can go on alone.

If the High School is open to all, that, in connection with the lower schools, will have a tendency to preserve a Republican equality, which is always disturbed when the advantages of a higher education are limited to a few.

The existence of the High Schools in the towns renders it possible for the boys and girls to obtain that part of their education which pertains to culture, at home. During that period of a child's life when his character is forming, he should be at home, under the wise control of home authority.

From what has been said, it appears that we must preserve our High Schools. A careful examination of the arguments made against the High Schools will reveal the truth, that no objection is anywhere made against them in themselves.

All admit that they form a necessary part of a system of schools, but objection is made by some to supporting them at public expense, and by others to their courses of study and methods of teaching. The first objection has been answered by showing the utility and necessity of their existence. The second objection may be well founded, and should turn the attention of educators to a study for those changes in the methods and practices of our High Schools that will remove all rational objections to them. I consider the High Schools to be the crowning excellence of our Common-school system; and that they may be as efficient as possible, I would recommend to those who have the direct control of them, that they guard against introducing into their courses of study more topics than can be mastered in the time assigned to the course, and that the topics chosen be those that will lead the student to acquire the most useful information, and, at the same time, be the occasion of the greatest amount possible of mental discipline.

[General Statutes, Chap. 38.]

An Act concerning the establishment of High Schools.

Sect. 2. Every town may, and every town containing five hundred householders shall, besides the schools prescribed in the preceding section, maintain a school to be kept by a master of competent ability and good morals, who, in addition to the branches of learning before mentioned, shall give instruction in general history, book-keeping, surveying, geometry, natural philosophy, chemistry, botany, the civil polity of this Commonwealth and of the United States, and the Latin language. Such last-mentioned school shall be kept for the benefit of all the inhabitants of the town, ten months at least, exclusive of vacations, in each year, and at such convenient place, or alternately, at such places in the town, as the legal voters at their annual meeting determine. And in every town containing four thousand inhabitants, the teacher or teachers of the schools required by this section, shall, in addition to the branches of instruction before required, be competent to give instruction in the Greek and French languages, astronomy, geology, rhetoric, logic, intellectual and moral science, and political economy.

SECT. 3. Two adjacent towns, having each less than five hundred families or householders, may form one high-school district, for establishing such a school as is contemplated in the preceding section, when a majority of the legal voters of each town, in meeting called for that purpose, so determine.

It will be seen from the above that some towns are required, and others are permitted, and indirectly encouraged, to maintain High Schools.

Ninety per cent. of the population of the State is in cities and towns having High Schools. The number of High Schools is 216; number of teachers employed in High Schools, 594; number of pupils attending High Schools, 19,160.

I consider myself fortunate in being permitted to present with my report the carefully prepared and able argument by Judge P. Emory Aldrich of Worcester, showing the right and the duty of the State to provide for secondary as well as primary instruction.

This most valuable contribution to the cause of popular education in the Commonwealth will be found in Appendix B.

NORMAL SCHOOLS.

The first Normal School of which we have any account was founded at Reims in the year 1681.

Prussia was the first nation to enforce the special training of teachers, and the excellence of the Prussian schools is without doubt due to the fact that they are taught by those who have had a professional training.

The Prussian law of 1819 established the plan in accordance with which teachers' seminaries were to be organized; some of the provisions of this law were as follows:—

(1.) No seminary of teachers of primary schools shall admit more than seventy pupils.

The number was limited, that the professors in the Normal School might be able to give personal attention to the training of every individual pupil, and that every pupil might have an opportunity, during the third year of his course, for much practice in the Primary School attached to his institution.

(2.) Teachers' seminaries shall be established in small towns whenever it is possible, so as to preserve the pupil-teachers free from the dissipations, temptations, and habits of life which are not suitable to their future profession, but without subjecting them to monastic seclusion; but the town must not be too small, in order that they may profit by the vicinity of several elementary and superior primary schools.

(3.) No young man can be received into a teachers' seminary who has not passed through a course of instruction in an elementary primary school. Nor can any young man be received, of the excellence of whose moral character there is the least ground of suspicion. The age of admission is from sixteen to eighteen years.

(4.) As to the method of instruction, the directors of the seminaries shall seek to conduct the pupil-teachers, by their own experience, to simple and clear principles, rather than to give them theories for their guidance; and with this end in view, primary schools shall be joined to all the teachers' seminaries, where the pupil-teachers may be practised in the act of teaching.

The science of teaching must be learned by a study of the mind; the art must be acquired by actual practice in applying the principles. Primary schools, and secondary, if possible, should always be connected in some way with the normal schools, so that the normal pupils may learn the art of teaching in the only way it can be learned; that is, by using it.

This provision of the Prussian law recognizes the truth that teachers are to learn to teach by teaching, and not by the study of books alone, or from lectures.

(5.) In every teachers' seminary the course shall be for three years, of which the first shall be devoted to a continuation of the course of instruction begun in the preparatory schools; the second year, to instruction of a higher order; the third, to practice in the primary school attached to the institution.

Before a young person is eligible for examination to enter a teachers' seminary, he must send to the director a certificate signed by a priest or a minister, certifying that his past character has been moral and blameless; second, a certificate from a physician, attesting his freedom from chronic complaints and the soundness of his health and constitution; third, a certificate of his having been vaccinated within two years; fourth, a certificate of his baptism (if a Christian); and, fifth, a certificate signed by two or more of his teachers, of his former industrious and moral habits and sufficient ability for the teacher's profession.

The subjects in which candidates for admission are examined are Biblical history, the history of Christianity, Luther's Catechism, writing, reading, arithmetic, written and mental, grammar, geography, German history, natural history, the first principles of physics, singing, and the violin.

In Europe, the Normal Schools are considered to be necessary to the success of the Common Schools, and they have multiplied to a marked degree during the last twenty-five years.

In 1875 there were in the different countries of Europe, British India, and the British colonies, 885 teachers' seminaries. There were 101 in Prussia alone; in Switzerland, 32.

Massachusetts was the first of the American States to introduce Normal Schools. The first public Normal School in the United States was established at Lexington, July 3, 1839; the second at Barre on the fifth of September of the same year. The Lexington school was afterwards removed to West Newton, and from thence to Framingham. The Barre school was removed in 1842 to Westfield. A third Normal School was founded at Bridgewater in 1840, a fourth at Salem in 1854, and a fifth at Worcester in 1874. The Boston Normal School was established in 1852; the Boston Normal Art-School in 1873. In 1876 there were seven Normal Schools in the State, containing 1,265 pupils taught by 70 teachers.

In the United States there are now about 137 of these seminaries, containing 29,095 pupils taught by 1,046 teachers.

Our Normal Schools have produced a marked effect on our Common Schools, by introducing into them more philosophical methods of teaching, based on the known laws of the human mind; by introducing a higher order of school government, founded on a knowledge of the true end to be obtained; viz., self-government; by preventing the waste of time and effort in schools taught by those who learn only by their individual experience; and by adding that dignity to the profession of teaching and to the pursuit of learning that always attaches itself to skilled labor, and to labor directed to the best ends by the best means. It may be of service to the cause of popular education in this Commonwealth to show, as definitely as possible, the exact results of our Normal Schools.

I have taken pains to gather such statistical information as those who desire knowledge on this subject would be glad to have at their command. Leaving out of the account the Boston Normal School, which is a city school, there were in the State Normal Schools, including the Normal Art-School, for the year ending July, 1877, 1,197 pupils. The whole number of graduates for the year was 256. The large number belonging to these schools, and graduating from them, will serve to show something of the popular estimate of their character.

I have procured some statistics concerning the results the graduates themselves produce. Beginning with the youngest of the schools,—

The Worcester School.

The account is for the year 1876. The class graduating this year was the first sent out from this institution, and numbered but ten. The report of the principal says: "The members of this class have been constantly employed in teaching since their graduation. All are teaching in Massachusetts and have been since they left the Normal School. These teachers receive on an average a salary of $500 each. All of them have been engaged by the same authorities that employed them at first. All have had an increase, notwithstanding the prevailing tendency to reduce all salaries." The superintendent under whom they have served, reports that they are teachable, earnest, faithful, and conscientious to a remarkable degree; and further, that they were as successful in their schools, *at first*, as other persons of like age and culture, but without the excellent training of the Normal Schools, usually are after two or three years of steady teaching.

The Salem School.

Reports of the graduates of the Salem Normal School for the period of time commencing January, 1870, and ending June, 1876, show that less than two per cent. of the whole number of graduates failed to teach, and for various reasons abandoned their intention of teaching; that eleven per cent. of the number, owing to various circumstances, have not taught, but declare their intention to teach; that eighty-seven per cent. have actually engaged in teaching; that eighty-nine per cent. of those teaching have taught in Massachusetts, and, with one or two exceptions, in the Public Schools.

The reports received in regard to the success of the graduates are generally satisfactory; the cases of failure are very few. The average length of time the graduates teach is eight years. The demand for these teachers has always been greater than the supply.

The Westfield School.

The statistics gathered at Westfield also show good results for that school. From extended observations, made several years ago, it appeared that from ninety-six to ninety-eight per cent. of the graduates of the school had taught for some length of time, and that the average term of service was as high as five or six years at least. Of late, owing to the depression in nearly all departments of business, and the consequent difficulty of raising money for the support of schools, some committees have felt obliged to supply their schools with "cheap teachers," and some graduates, as well as many other excellent teachers, who were willing to teach, have not found employment at rates they could afford to accept. Of the graduates of this school for the year covered by this report, thirty-nine, or about seventy-four per cent., are known to have engaged in teaching. Three others are continuing their studies. Of the remaining number, none are known to be voluntarily out of the service of the Commonwealth.

The work of the graduates is variously estimated by the committees. Many commend enthusiastically; most admit it to be of superior quality; a few condemn. Some who do not approve of the "Normal methods," would, nevertheless, have teachers attend the Normal School, because they have observed that the graduates of the school usually have greater professional enthusiasm, and are more ready to receive and act upon suggestions from their superiors. This is high praise for the school; for the success of the teacher in developing desirable character in his pupils depends upon his temper and his enthusiasm, as much as upon any particular method of teaching he may adopt. It must be admitted that some of the graduates fail in teaching or in governing, or in both. But it is certain that the proportion of failures is at most not greater than among the graduates of other professional schools. The observations of Mr. Walton, agent of the Board, who has visited extensively in the schools of all the towns of Western Massachusetts, where the teachers of this school are generally employed, confirm the above testimony. In one of his reports, made to the Board, he says: "I find the Normal graduates quite uniformly pursuing natural methods, and this with marked success."

Scattered over this part of the State, they have carried into almost every town and hamlet the results of their professional training. They have not only taught better themselves, on account of their methods and their good spirit, but they have produced a marked effect on all grades of teaching in other schools than their own.

The Bridgewater School.

This school graduated last year fifty-three teachers. Forty-one of this number are now teaching, three are continuing their studies, the remaining six have been prevented by various reasons from engaging in teaching, but all of them propose soon to begin the work. Thirty-seven of the forty-one are teaching in Massachusetts, a few of them in the graded schools of the cities, but more than four-fifths of the number are in the Common Schools of the country towns.

The testimony of those who employ the graduates is in the main very encouraging; some of them signally fail, finding themselves on trial to be unfitted by nature for the work; the great majority succeed, many to a marked degree. They are distinguished for their ability to control, for their enthusiasm, devotion to their calling, system in teaching, and for their ability to unfold clearly the subjects presented.

Statistics compiled from reports received from graduates show that nearly all of the total number of graduates of the school have engaged in teaching, more than four-fifths of them in Massachusetts. The young men who graduated during the first thirteen years of the school have taught an average of eight and three-fourths years. The young women who graduated during the same period have taught an average of eight and one-fourth years. Many of these graduates are still teaching, and intend to make teaching a life-work.

The young men who graduated during the next seven years have taught an average of seven and one-sixth years; the young women of the same period, an average of six and two-thirds years. Of the graduates since that period, as large a proportion as before have engaged in teaching, and a smaller proportion have left teaching for other vocations.

The four years' course of study was introduced in 1870, to meet the demand for Normal teachers prepared for a higher grade of teaching. The first class, formed in 1870, consisted of two young men and one young woman. Thirty-seven young men and twenty-one young women, more than one-third of the school, are now pursuing this course. The addition of a higher course of study has increased the number of pupils in the school, has stimulated the pupils of both courses to higher endeavors, and has given to the school a higher place in public estimation.

The success of the graduates from the four years' course has abundantly shown the wisdom of its establishment. It is but seven years since it was started. Many have taken the two years' course, with one or two additional terms of study, and have gone forth to do much better work than they could have done with the training of the shorter course.

Seventeen have graduated from the four years' course, nine ladies and eight gentlemen. Of the ladies, two are assistant teachers in State Normal Schools, two are assistants in High Schools, four are in Grammar Schools, and one has married. Of the eight gentlemen, one is principal of a High School, four are principals of Grammar Schools; one is a sub-master, and two are ushers in Grammar Schools.

The Framingham School.

Miss Hyde, principal of the Framingham school, reports as follows: —

During the year 1877 we have graduated forty pupils, — nineteen in January and twenty-one in July. Of these, thirty-four have been teaching, and some others are soon to begin. Of the six who have not yet taught, one is married, the others have been prevented from teaching by various causes, but intend to begin soon. Twenty-nine of these thirty-four have been employed in Massachusetts, one in Washington, D. C., one in Vermont, one in New Hampshire, and two in Connecticut.

Of these thirty-four, one has failed in discipline, though she taught well, and, I think, with further trial in more favorable circumstances, will redeem her reputation. The others have succeeded; most of them have given entire satisfaction, and are spoken of in the highest terms by those who employ them. Several committees report a very marked superiority in their work over that of their unnormal teachers.

They are engaged in all kinds of schools. The graduates from the advanced course are all in High or Grammar schools, except one who preferred to begin in the primary grade. The others are mostly in primary and ungraded schools. Their salaries range from $900 per annum to $6 per week. I cannot give an exact average.

Their enthusiasm and their ability to teach are the qualities which are most frequently mentioned by the committees. The reports which I have received from these committees and superintendents have been very gratifying to me.

The average time of teaching by graduates of this school is six and two-thirds years.

The following is a list of the places in which the graduates of 1877 are employed: —

Northborough,	1
Maynard,	2
Washington, D. C.,	1
Natick,	2
Newton,	1
Uxbridge,	1
Framingham,	2
Berlin,	4
Sudbury,	1
Upton,	2
Hudson,	2
New Hampshire,	1
Marlborough,	1
Templeton,	1
Tyngsborough,	1
Northbridge,	1
Lunenburg,	1
Sherborn,	1
Carlisle,	1
Lowell,	2
Vermont,	1
Southborough,	1
Connecticut,	2

Rev. James Fraser, one of the commissioners of the English schools, and the best foreign authority on the schools of this country, after an extended observation, in a report to his government, says: —

"The training institutions of the country, as yet, are far from being organized with a completeness that corresponds with other portions of the system; nor is their capacity for supplying teachers at all adequate to the demand. In many places, too, there exists the same kind of narrow prejudice against the employment of trained teachers that for so long a time prevailed in England, and is scarcely extinct now; and the salaries are frequently so low that the services of really competent persons cannot be secured. All sorts of plans are adopted in the different States to improve the quality and increase the quantity of the teaching power, but hitherto, it must be confessed, with very limited success, and more complete appliances for training teachers is still one of the things wanting to the perfection of the American system of public schools."

The good influences the Normal Schools of the Commonwealth have exerted cannot be estimated. They have sent into the Common Schools teachers who, by their enthusiasm and their improved methods, have aroused a general interest in the study of the philosophy of education, and in the application of correct principles to the art of teaching.

The schools have been criticised by those who do not fully appreciate the difficulties with which they have had to contend, and, first, for admitting classes on a low standard of scholarship; secondly, because many of the graduates exhibit but little normal training in the schools they themselves teach. Whenever the preparatory schools furnish candidates better prepared for the Normal Schools, and the school authorities establish the conditions necessary that Normal teaching may be possible, these criticisms will not be made, as the occasion will no longer exist.

There is now a demand for teachers of extensive learning and thorough training to take charge of the Primary Schools; no other teachers can conduct our elementary instruction to the right results. An effort should be made to encourage well-educated young men and women to enter the Normal Schools for the purpose of obtaining that professional training requisite for good elementary teaching.

Connected with all our Normal Schools, there should be schools of observation and practice, taught by well-trained teachers and under the supervision of the principals of the Normal Schools. After completing the course of training now given in the Normal Schools, the graduates should remain at least one term for uninterrupted practice in the elementary schools attached to the Normal School.

The first year in the Normal School should be devoted to a careful review of Common-school studies, with reference to methods of teaching them; the second year, to a completion of this work, and to a study of the principles of teaching. An additional course should then be taken for the practice, in the elementary school, of what has been learned in the Normal School. If this plan is adopted, I am sure good results will follow.

Teachers' Institutes.

The Teachers' Institutes commenced September 19, and were held for nine successive weeks in towns as follows :—

Concord,	Middlesex County
Middleborough,	Plymouth "
West Brookfield,	Worcester "
Bradford,	Essex "
Amherst,	Hampshire "
Westborough,	Worcester "
Holyoke,	Hampden "
Franklin,	Norfolk "
Harwich,	Barnstable "

Institute-work was also done by the Board through the Secretary and one of its Agents at Chilmark, Dukes County, in connection with the Dukes County Teachers' Association. The sections of the State not having ready access to these Institutes were well provided for last year, one having been held in Franklin County, and two in Berkshire.

A very gratifying interest was manifested by the people in the localities where the Institutes were held; the evening audiences in several instances crowded to overflowing the halls where the exercises and lectures were given. These, like the day exercises, were largely directed to the discussion of the means of improving the schools, nothing being introduced for mere popular effect.

The Institutes are understood, I presume, to be of the nature of a brief training-school for teachers. They are conducted by the Secretary and Agents of the Board, who are assisted by special teachers, skilled in the several departments which they teach. The exercises consist of illustrations of the best methods of presenting the various topics taught in the schools, the members of the Institute being treated for the time as a class of pupils, and subjected to such rules as should govern a good school. But, aside from this illustration of methods of teaching, designed particularly for teachers, a portion of each evening session of the Institutes has been of the nature of a "Conference meeting," in which the members and the people of the neighborhood have been invited to exercise the utmost freedom in discussing the methods of teaching presented in the Institute, and of the needs of the schools in general. These conferences have shown how cordial and hearty is the interest of the teachers in the methods of teaching, and how solicitous are the people to adopt the means best suited to give success to the schools.

The methods of teaching have been quite uniformly objective and oral, and so illustrate the demand now making upon the teachers for a training and plan of work in accordance with the nature of the mind they are to assist in developing. I have attended all the Institutes, and witnessed nearly all the exercises, and have had a good opportunity to observe results; and so satisfactory have they been, that I feel warranted in saying that the Teachers' Institutes should be classed among our most effective means for improving the schools, and should be held in larger numbers, and some of them, I think, for longer periods of time.

All the details of arranging for the Institutes and their general conduct have been left entirely to the Agents of the Board. How efficient they have been in this service is shown by the large attendance, unprecedented, I believe, in the history of Institute-work in this State, also by the general satisfaction everywhere expressed in the work accomplished. From their reports, I gather the following items:—

There were registered at all the Institutes, 1,847 names; every county in the State, and nearly 200 towns, were represented.

Exercises were distributed as follows:—

Reading, spelling, and vocal culture,	25	lessons.
Language, grammar, English literature, and composition,	21	"
Arithmetic, geometry, and book-keeping,	43	"
Geography and history,	33	"
Physiology, zoölogy, botany, mineralogy, and geology,	32	"
Penmanship,	10	"
Drawing,	14	"
Vocal music and gymnastics,	13	"
Principles of teaching and school management,	23	"
Lectures of a general character,	35	"
Total,	249	lessons.

Of these 249 exercises, there were given,—

By persons employed for special service,	77
teachers of the Normal Schools,	36
the Secretary and Agents of the Board,	136

The lecturers and teachers employed for special services were the Hon. Joseph White, Hon. B. G. Northrop, Rev. A. D. Mayo, Mr. Wm. I. Marshall, Mr. J. S. Diller, Mr. H. E. Holt, Mr. Chas. S. Minott, Mrs. A. G. Dickinson, Mrs. E. N. L. Walton, Miss Elvira Carver, and Miss Mary E. Kingsley.

The teachers of the Normal Schools who assisted at the Institutes were Dr. D. B. Hagar of Salem; Miss Ellen Hyde and Miss Amelia Davis of Framingham; E. H. Russell, A. M., of Worcester; J. G. Scott, A. M., and Miss A. M. Spalter of Westfield; A. G. Boyden, A. M., Geo. H. Martin, A. M., Mr. B. B. Russell, Miss Eliza B. Woodward, and Miss Isabelle S. Horn of Bridgewater. The services of these teachers were most cheerfully rendered, and contributed much to the success of the Institutes. Their good method must have served also to commend to the teachers the extended course of instruction pursued at the Normal Schools.

I desire, in this public manner, to express to the several railroad superintendents, the thanks of myself and associates, for courtesies liberally extended to the members of the Institutes; to the committees and citizens in the several localities where the Institutes were held, for the ministries of kindness and sympathy everywhere shown; and to the teachers, members of the Institutes, for their cheerful conformity to the rules of the Institutes, and for the lively interest taken in the exercises presented.

Agents.

For want of funds, the Board of Education have limited the number of Agents to two. Mr. George A. Walton and Mr. E. A. Hubbard are the two retained. These gentlemen have labored with great skill and fidelity, desiring to make up, if possible, by increased exertion, for diminished numbers. They have been employed constantly in attending County Teachers' Associations, school committee meetings, State Teachers' Institutes, and in visiting towns for conference with school committees, teachers, and citizens.

They were occupied for nine weeks in organizing and conducting nine Institutes, as above described, bringing into them more than 1,800 teachers, besides large numbers of school officers and citizens. The result of the Institutes were so satisfactory, that the Board have received many invitations to hold others, whenever the time of the Secretary and Agents, and the funds at their command, will permit.

Many of the towns of the Commonwealth have no school officers who spend their entire time in superintending the schools. In such towns the visits of the Agents are especially welcome. They advise the teachers concerning the classification of their schools, their methods of teaching, and concerning all that which contributes to success in school-work. They have been accustomed to labor in the school-room during the day, and in the evening to call together the committees, the parents, the teachers, and the friends of education to listen to an address having for its general object a discussion of the importance of our schools and the obligation the State is under to support them; the necessity of employing good teachers; of treating the schools generously in so far as material aid is concerned; of giving to the teacher a cordial co-operation; and of bringing all the children of school age into the schools, and of keeping them there until they are trained enough to fit them to perform properly the duties of private and public life.

It is through the Secretary and Agents that the Board is able, in a measure, to give public expression to their views. And it is through these officers that the town organizations can express their wants to the Board and to the State. I am sure that no educational instrumentality can be devised that, for the simplicity of its organization and the small expense by which it is supported, will be likely to accomplish so much for the schools of the Commonwealth. The Agents have commended themselves by the conscientious and faithful manner in which they have served the State, and happy indeed would it be for the schools if a sufficient number of such men could be employed to visit twice in the year every town and every school in the Commonwealth.

COURSE OF STUDIES.

The reports made by the Agents of the Board, taken with my own observations in the school-room, confirm the impression I had previously entertained concerning the changes that should be made to prevent waste in school-work. I am persuaded that a great waste may be prevented, by limiting the study of arithmetic to the fundamental operations in numbers, integral and fractional, and by limiting the application of the knowledge and skill acquired, to the arithmetical problems that present themselves in ordinary affairs and in common business life. A waste may be saved by omitting English grammar from the elementary course of studies, or by deferring its introduction into this course until the last year of the Grammar-school course.

Again, waste could be saved by omitting to teach geography as a science until the pupil has reached the Grammar School, and then by teaching only a limited amount of *important* knowledge. More attention should be given in our schools to the method of teaching language, and more time spent in constructing and writing the language. Pupils should be thoroughly prepared by object-teaching for their reading-lessons, care being taken that every word the pupil uses shall be the correct name of some idea his mind possesses.

Spelling and penmanship may be taught in connection with reading and with the writing of elementary compositions. If the waste caused by the somewhat prevalent methods of teaching arithmetic, grammar, geography, and spelling could be prevented, time would be gained for teaching in the elementary schools the elements of the sciences, and more could be done towards teaching the pupils a method of study. A disastrous effect is produced on the mind, by attempting to teach it what it cannot understand, or what is useless for it to know.

METRIC SYSTEM.

AN ACT in relation to the Metric Weights and Measures.

Be it enacted, &c., as follows:

SECTION 1. That from and after the passage of this act it shall be lawful, throughout the commonwealth of Massachusetts, to employ the weights and measures of the metric system, and no contract or dealing, or pleading in any court shall be deemed invalid or liable to objection because the weights or measures expressed or referred to therein are weights or measures of the metric system, &c.

SECTION 3. The treasurer is hereby authorized and directed to procure duplicate sets of the weights and measures, conformable to the standards now in the treasury; of which two sets shall be retained for the use of the treasurer and his deputy, and from which there shall be furnished one set to the treasurer of each shire town and of each city not a shire town, in the several counties of the commonwealth.

The above act, passed by our Legislature, was approved March 10, 1877; it is in conformity with the Act of Congress of 1866. As will be seen, this act legalizes the metric weights and measures in all contracts made henceforth in this Commonwealth. I need not describe the system which is thus authorized. It is found described in all our school arithmetics; and through the public journals, and in other ways, has become more or less familiar to the people.

It has a single standard unit of length called the meter, and upon this unit are based all other units; it is analogous to our system of monetary units.

Probably the passage of the act alone would not necessitate the teaching of this system in all our schools. But the act itself was a tardy response to the demand for the introduction of the system itself into all commercial and other transactions in which measures of distance, volume, weight, and capacity are used. The system is already in use in all large laboratories in this country; a knowledge of it is required for admission to all the principal colleges; our silver coinage is based upon it,—the twenty-cent coin weighing 5 grams, the ten-cent piece, 2½ grams, and the five-cent piece, nickel, being 2 centimeters in diameter, and weighing 5 grams. The system is extensively used in commerce and in manufactures; it has been adopted by more than one-half the nations of the civilized world; and is, unquestionably, soon to become universal.

The system is of exceeding simplicity. "A boy at school," says Charles Sumner, "can master the metric system in an afternoon. Months, if not years, are required to store away the perplexities, incongruities, and inconsistencies of the existing weights and measures, and then memory must often fail in reproducing them. The mystery of compound arithmetic is essential in the calculations which they require. All this is done away by the decimal progression, so that the first four rules of arithmetic are ample for the pupil."

I deem it important that this system, which I believe is to be of immediate practical value to the present generation, and "a universal blessing" to mankind, should be learned by all our children. Accordingly, I would recommend the teaching of the system in all our schools of suitable grades, and I hope that a law will soon be passed making the teaching compulsory.

The Moral Element in Teaching.

From their first organization, the spirit of our educational institutions has been in favor of piety and justice. Section 10, chapter 38 of the General Statutes makes it "the duty of the president, professors, and tutors of the university at Cambridge, and of the several colleges, of all preceptors and teachers of academies, and of all other instructors of youth, to exert their best endeavors to impress on the minds of children and youth committed to their care and instruction, the principles of piety and justice, and a sacred regard for truth; love of country, humanity, and universal benevolence; sobriety, industry, and frugality; chastity, moderation, and temperance; and those other virtues which are the ornament of human society, and the basis upon which a republican constitution is founded; and it shall be the duty of such instructors to endeavor to lead their pupils, as their ages and capacities will admit, into a clear understanding of the tendency of the above-mentioned virtues, to preserve and protect a republican constitution and secure the blessings of liberty, as well as to promote their future happiness, and also to point out to them the evil tendency of the opposite vices."

From this statute, passed in 1789, it will be seen that the fathers gave great prominence to the moral element in education. They were aware that the new State they were about to establish would rest securely on no other foundation than virtue added to intelligence. They knew that all knowledge and all training which do not contribute, directly or indirectly, to the building up of a good moral as well as intellectual character, would serve to create power wanting in those attributes that direct the use of power to the accomplishment of good ends.

In obedience to their convictions, they required the youth who should resort to the schools to be early and constantly taught to have a sacred regard for the truth, a love of country and of man; to practice all the virtues that contribute to the perfection of individual character, that render one an ornament to society and a conscientious supporter of republican institutions.

The necessity of moral training makes the teaching of morals obligatory upon all who have anything to do with forming the character of the young. The means to be used are good examples and right precepts; examples at first, and precepts with examples, after the mind has had experience sufficient to enable it to understand the language by which precepts are described. Whatever the teacher would have his pupils become, in so far as moral character is concerned, he must himself be. If he would have them grow in honesty, he must himself live an honest life in their presence. Even young pupils are skilful in detecting the motives that control the teacher in the management of his school. Truthfulness, or the want of it, is discerned in the records that are kept of attendance, of recitation, and of deportment.

Honesty, or its opposite vice, may be revealed in the means employed to detect the violation of school rules; in contrivances connected with examinations; in a pretence to more knowledge than is possessed; in a failure to acknowledge mistakes, and in all those artifices which may be employed to set out the school in a favorable light. Example is the most powerful and satisfactory means of teaching to the young the facts and the excellence of a moral life. Young pupils are inclined to consider their teachers to be models worthy of unlimited imitation. They quote their sayings as authority, and refer to their acts as infallible guides in all similar cases. This relation is most favorable for producing those early impressions that are never effaced, and that give direction to future conduct and character to future life.

During the time of study and of play, the teacher should observe the moral conduct of his pupil, and should lose no opportunity offered for training him to love that which is beautiful and true. A sound morality may be taught and made the basis of all moral conduct, and still no approach be made towards interfering in any way with the peculiar opinions that give rise to sects and parties. No teacher whose mind has been set free, by a liberal education, from prejudice and from an inclination to make forms superior to principles, will have any tendency to introduce into his moral teaching that which is not essential to good morals, nor to the fundamental principles of Christianity.

The moral element in education must not be neglected by our teachers, for it is that which has given vitality to our institutions in the past, and it is that which alone can make them worth supporting in the future.

JOHN W. DICKINSON.

Boston, January, 1878.

REPORTS OF AGENTS.

REPORT OF GEO. A. WALTON.

Gentlemen of the Board of Education:

The following is a report of my work for the past year, with some suggestions prompted by my observations:—

General Plan of Work.

I was employed for several weeks of the first of the year in abridging and preparing for the press the Centennial Report on Academies, which was subsequently published in the annual report of the Board. From this time to the month of May, I visited schools, held meetings of teachers, and addressed the people in the towns of the western counties of the State, the section especially assigned to me. I visited one hundred and sixty-seven schools in twenty-seven towns, spending one or more days in each town, and usually lecturing in the evening. My object in these visits was to illustrate, in the schools and in teachers' meetings, methods of teaching; to awaken a more intelligent interest on the part of the people; and to render such service as I could in aid of the school committees. My visits were usually made after notice had been given, and I was generally accompanied by superintendents or school committeemen to the schools.

Since May, when the number of Agents was diminished, my visits have extended to other parts of the State, and embraced other objects as well as those named above, so that the number of towns or schools visited would afford no proper basis for estimating the amount of work done. To my other duties has been added that of enlisting the sympathy and co-operation of school committees in the teachers' institutes, and especially in the committee meetings which it was proposed to hold throughout the State. The necessary arrangements for these meetings, and the labor which they have devolved upon me, the labor of arranging for the institutes, and conducting them, with my ordinary work, have fully occupied my time.

The Schools.

The schools present from year to year many of the same points to criticise and to commend; particular schools may be wholly transformed, from bad to good, or the reverse, but, as a whole, they change by slow degrees; in no respect is this more true than in their methods of teaching. Teachers come and go; at best they are an itinerant class; committees change triennially; children have a longer lease upon school life; but the golden-haired tottling who enters school to-day, in a few years will step out a man or woman in feeling if not in fact. The school-house outlasts all these; but, though as sung by the poet,—

> "Still sits the school-house by the road,
> A ragged beggar sunning,"—

seemingly the emblem of permanence, there are methods of teaching found in the schools which are types of an age so primitive that no vestige or tradition of a school-house belonging to it, remains.

The value of a method does not depend upon the length of time it has been in use; and there are methods in the schools to-day which for generations have been condemned by the best educators. There seems to be an almost universal opinion that education results necessarily and chiefly from using books. In many schools, nature, which should be the teachers' companion and guide, has not even the smallest part on the programme. Not a single natural object is introduced to occasion ideas; not even a piece of apparatus, or a picture, if maps be excepted, is present to suggest nature as the means of an education. Instead, the child is constrained to an inactive state of body and mind, and set to shouting or droning out meaningless sounds; then, to combining into words the letters with which, by a coincidence in time alone, the sounds have been associated; and this process is continued till the words are put together to make sentences, if a form which expresses no idea can be called a word, and a collection of forms which expresses no thought can be called a sentence. The children in the majority of the schools I have seen are taught in this way to read,—I should perhaps say, this process is in the way of their being taught at all, for if they become good readers, it must be in spite of the process. And it is in the bad state of mind induced by this irrational process they are put to learning almost all the lessons in some of the schools. Under the name of arithmetic, the young learner is set to spell out the abstractions of numbers by the book; to guess out and rub out and guess out again his problems; it is by the same process that under the name of geography the names are spelt out on the map; and so on till the mind has learned a multitude of forms which it can marshal at command, but of which it is wholly unable to give the sense.

The conditions in which these methods had their origin still exist to perpetuate them. We yet have the untrained teacher,—a girl belonging to the neighborhood, claiming the school in the summer, and the untrained man, young or old, who having kept it for the winter, is ready in the spring to exchange teaching for his professional study or for farm labor; the practice of "boarding round," is still employed to eke out the term in the district school; and still there exists the district agent, or prudential committee, who employs the teacher which another committee is to certificate and oversee. And in some places where the district system does not exist, the evils of the system are entailed upon the schools, by electing a school-committee man in each district or ward. So long as these conditions exist, traditional methods of teaching will prevail. They do prevail to a greater extent than is credible to those who have not visited the schools of the State; and the results present a strong claim for the sympathy of the philanthropist and the legislator.

A portion of the schools only are under such conditions as above described, or taught by such methods. In but few, indeed, are the methods wholly bad; but that any of our children should be stultified under the name of education, is too startling a proposition to be treated with indifference.

The more repulsive modes of discipline associated in our minds with this kind of teaching,—the whippings with rod and tongue, and other tortures to which it subjected the child, the ignorance of childhood's needs which it presumed, with the dislike for school which it fostered,—I am happy to say, have almost disappeared. The great proportion of the schools are characterized by good order and quiet; habits of industry are acquired; the mode of discipline which prevails is humane; and the spirit of the teacher, in general, kindly; and from this better spirit many good results naturally follow.

The improved spirit in the schools is general; and the methods of teaching and school management in most are changing for the better, while many are in the highest degree satisfactory. In most schools, if not in all, the class has made captive the individual, a gain in many ways; in the cities and villages the graded school has prevailed over the mixed school. This is true even of the lowest, or Primary School; courses of studies, or programmes of work, and periodical examinations have aided very much in promoting classification. All these things assist in the good ordering of the schools.

In many, the elementary work, referred to above, is done by the most rational of methods. In learning to read, the child is first led to name the thing described in his reading-lesson, and then to recognize its written sign, or name. The oral names which he already knows he sees in their written forms; the oral sentence which he has used is expressed for him in written words; and thus he learns the written expression. Learning to read in such schools is thus made a natural process, and the child takes delight in it, and, as the result, has his mind in the best possible condition. Other subjects are taught by the same rational method; lessons in numbers, with objects; geographical terms, in connection with the features of the earth itself; the elements of natural history, with natural objects.

Marked results of the improved methods of teaching have come under my observation during the past year. As an example, in the town of South Hadley, I visited a Primary School in which, in addition to learning to combine numbers, to read with expression, and spell all the words used, a class of children had learned to name and describe the geometrical forms; to make all the colors; they were familiar with, and could apply the botanical terms to the parts of the plant; so of the terms of zoölogy, with their application to the parts of the human system. To this was added a knowledge of the elements of mineralogy; progress in drawing and composition, with writing, had been made; and the singing was not neglected. All this was accomplished without any apparent detriment to the children, but, on the contrary, with an increase of health, both physical and mental. I could specify other remarkable instances of good methods, and show what they accomplish for the schools; but a single illustration is sufficient to denote what, under favoring circumstances, is possible, and should encourage all teachers and friends of education in striving for better results than are in general at present attained.

I cannot but feel that the progress already made, great as it is for the child, is most to be prized for its economic value; for its economy of time, of money, and of nervous power in the teacher. Everything in connection with the schools points to still higher ends they are to strive for and to reach; the discussions among the people; the awakening of the committees; the study of the philosophy of the work among the teachers, indicate the demands that all the schools shall reach a higher plane. Nothing less will satisfy these demands, than that the schools shall be conducted wholly in the interest of the child. The entire plan of the schools, the control, the courses of study, the methods of teaching, must eventually come to be based upon the nature of the mind.

In my visits, the same courtesy has been extended to me by committees, teachers, schools, and by people, as heretofore.

TEACHERS' INSTITUTES.

The number of institutes held during the fall was nine. In the conduct of four I acted as assistant; in the other five as principal. Those of which I had sole charge were held in the following towns, and had the attendance as indicated.

TOWNS.	Attendance.	Towns represented.
Middleborough,	218	21
Amherst,	167	23
Holyoke,	407	22
Franklin,	195	20
Harwich Port,	140	18

A programme of exercises for each of these institutes was sent to all the towns from which teachers were likely to attend. The plan of a programme was new, and, so far as I can judge, has worked well. The attendance was larger than in any former year since my connection with the institute-work; so large as, in several instances, to necessitate a change of place for holding the sessions during the closing days. The attendance of teachers of the higher grades of schools, and of school committees, was unusually large. The more advanced work announced in the programme attracted some of the former, while the latter seem to have had a newly awakened interest in teaching, excited by the committee-meetings recently held. It is a good omen for the schools that members of the school committees, with their note-books in hand, have in many cases attended all the sessions of a four-days' institute. It furnishes an example which I would commend to others who can afford the time, and to all teachers. The interest in the institutes would be heightened if all the members should be present at the first and at all the exercises of every day. This is a suggestion which will commend itself to the good sense of all who have the interest of the schools at heart.

An effort was made to conduct the institutes upon the plan of a good school; the members removed their outside garments, registered their names, and occupied, as nearly as possible under the circumstances, the same seats through all the sessions; they conformed to the rules they would themselves wish to enforce in their own schools; they were furnished with blank-books and pencils, and took notes of the topics and methods of teaching.

The plan, hitherto practiced to some extent, of teaching the teachers of different grades of schools in sections, has been followed the present year, and with good results. By this plan the teachers of the institute are more fully employed, and the wants of individual members and of the classes are more nearly met, and the good effects of the institute are largely increased.

In this series of institutes a larger number of lessons than in any previous year has been given to illustrate the teaching of the natural-history studies, botany, zoölogy, and mineralogy, and also the teaching of the sciences of geology and geography.

It is thought that these branches should be more generally taught in the schools, and taught by better methods; and for want of proper teaching in their elements, in the lower schools, it is practically impossible to teach the sciences in the higher. It seemed, therefore, desirable to show a general plan for teaching both the elements and the sciences, and this could be done only by taking time and employing a special teacher. Possibly less attention was given in the institutes to some of the branches more generally taught, than might be thought desirable; but teaching in these branches is illustrated by the Agents of the Board in their visits to the schools, under the most favorable circumstances, by actually teaching a class of children. And yet, by reference to the list of exercises given in the report of the Secretary, it will be seen that all the more common branches received a share of attention.

Much more instruction was given than heretofore, in illustration of the principles upon which teaching depends, to the mode of activity by which the mind gains knowledge and discipline, and to the order of studies and methods of teaching adapted to its wants. These lessons have excited the deepest interest with the members. The aim has been also to conform the teaching, in all the subjects taught, to these fundamental principles, and so to give the best models for teaching in the schools. It seems to me, in general, the results have been very satisfactory. In forming this judgment my observation is assisted by the hearty commendation of the institutes, both in public and private, by members who have held the most intimate relations with their working.

Too much cannot be said in grateful acknowledgment of the kind and forbearing spirit with which the members have conformed to the rules of the institutes, or of the earnestness with which they have entered into the work. Nor can too much praise be bestowed upon the committees and people for the manner in which they have provided for the needs of the institutes, and the entertainment of the members. In every instance the membership has been larger than was expected, yet the accommodations have been ample, and most cordially bestowed. These attentions have everywhere been the subject of remark, and in several instances they have been publicly recognized by the passage of formal resolutions.

As I see, in my visits to the schools, teachers practicing upon the hints they have received at the institutes, I am more and more confirmed in the opinion, that for the expense attending them, and for the good they effect, the institutes are the most important means at command for improving the methods of teaching. And I am confident that institutes held for a series of weeks, as previously recommended, especially at points remote from the Normal Schools, would meet with favor, and result in still greater good. They cannot meet the wants of teachers as Normal or training schools do, but they are inspiring and suggestive, and a few good lessons to intelligent teachers are of great value for what is suggested, as well as for what is taught.

School-committee Meetings.

I have attended eight of the school-committee meetings held during the summer and fall. In all there has been shown an earnest desire to discover the best means for improving and conducting the schools. The subjects which have been most fully discussed were the means of supporting the schools, the attendance of the children, the course of studies, qualifications of teachers, and methods of teaching.

All have agreed that the State should do something to equalize the taxes for the support of the schools in the different towns, and that the laws providing for the attendance of all the children must be more vigorously enforced. In discussing the examination of teachers, the course of studies, and methods of teaching, the hope has been generally expressed that this part of the school-committees' work would at no distant day be committed, in part at least, to the hands of educational experts. Nothing that has come under my observation in connection with the schools seems to promise more for their improvement than these school-committee meetings.

Respectfully submitted.

GEORGE A. WALTON.

Westfield, January 1, 1878.

REPORT OF E. A. HUBBARD.

To the Board of Education:

GENTLEMEN,—The duties of your Agents, as set forth in chap. 34, sect. 9, of the General Statutes, are "to visit the several towns and cities for the purpose of inquiring into the condition of the schools, conferring with teachers and committees, lecturing upon subjects connected with education, and in general of giving and receiving information upon subjects connected with education."

In accordance with this statement of duties, I have visited in the year ending November 30, 1877, thirty towns in the section assigned me, and two hundred four schools. In many of these towns I have given lectures upon educational subjects, have held meetings of committees and teachers for conference and suggestion, and have spent as much time, and done as much work in the schools visited, as circumstances would permit. In some cases I have visited all the schools in the town; in others, only a few; and some committees have brought the teachers and the schools together for a half-day session.

And in this connection, the question arises, whether it is worth while to undertake to visit all the schools of a town, requiring in most cases two or three days. Would it not be better, in a town where there are a dozen schools, or even a less number, so far apart that not more than two visits, and those short ones, can be made in a half-day, that the school committee should bring the teachers to the school at the Centre, retain so many and such classes of that school as may be necessary for showing methods of instruction and the application of principles, and so invite questions, criticisms, suggestions, and discussion. Then, if such a day's work could be followed in the evening by a lecture to the people, or better, by a familiar talk with them, taking its key-note from the day's developments, making what may be called a home institute, there would be a minimum of expense in the time of the agent, and, it seems to me, a maximum of good to the schools of the town. If it be thought that by this method we should fail to gain the information desired of individual schools, a set of questions might be presented at these meetings, such as the following: How many of your school-rooms are furnished with good blackboards, with a numeral frame, with a globe, with an unabridged or other large dictionary, with other books of reference, with a box of forms, with other readers than the prescribed reading-books? etc., etc. How many daily recitations does your committee allow or require you to have, and how often does your committee visit your school? Questions such as these would be interesting to teachers, the answers possibly suggestive to committees. Such meetings would have at least these advantages over the ordinary teachers' institute: the small number of teachers, the greater individuality and personality, the presence of pupils for a practice-class, the greater freedom for questions and criticisms, and the co-operation and the control of the school committee. A much larger number of towns could be visited in a year, unless the labor should prove too great for one man, and then the two Agents might unite in such a meeting, as Mr. Walton and myself have done in several instances the last year.

The section assigned to me two and a half years ago, embraces several large towns, and many smaller hill towns. Hence the state of things referred to in my last report,—of some schools with too many, of others with too few scholars. Additional school accommodations have been provided in some of the towns, while in others the schools are still overcrowded. The law requiring an additional teacher when the school averages fifty pupils is not observed, and not unfrequently the teacher finds herself able to do very little, from the fact that there is so much to do. It is in the power of the towns to remedy this evil; but the other, of too small schools, presents many practical difficulties. Where the district system prevails, and there are only from four to eight children in the district, it is well-nigh impossible to have a good school. The wages are small, the advantages few, the opportunities unfavorable, and a well-qualified teacher can be secured with difficulty, and, if by her success she merits promotion, can be retained with still greater difficulty. Provision is made by law "for the conveyance of children" from one section to schools in another; but where the district system remains this can be prevented, and in towns where the system has been abandoned there is an unwillingness to make the necessary appropriations.

The ordinary appropriations in many of the towns are insufficient to maintain good schools during the time the law requires; for while these towns pay more than three times as much on a dollar of their valuation as Boston and Brookline do, the valuation is so low that the amount raised is small. Hence the people are heavily taxed for schools poor in quality and limited in time, and the children are the sufferers. But if children are in any sense the children of the State, and if the Commonwealth is to look after the common weal, it would seem that the Legislature should do something toward equalizing school burdens and school privileges.

There is also a lack of supervision. Sometimes the private business of the committee overshadows school duties; sometimes those competent to supervise the schools are unwilling to serve on the committee; and sometimes the most competent in a town are those who forty years ago were successful teachers, but who for these years have been absorbed in other pursuits, and in matters of education have not kept up with the times.

The laws relating to compulsory attendance are only partially enforced. The duty is an unpleasant one, and is sometimes shirked, or the town has neglected to "make all needful provisions and arrangements concerning habitual truants," or some of the grounds of escape from the penalty for not sending a child to school are such as to lead to hesitation. For example, the law imposing a penalty of twenty dollars upon the parent or guardian who neglects to send his ward to school twenty weeks in a year exempts such parent or guardian, "if the party so neglecting was not able, by reason of poverty, to send such child to school." So the parent pleads poverty,—perhaps the real reason is cupidity,—and the law does not specify the degree of poverty contemplated by the statute, and the school committee are in doubt what should be done. A member of the State Detective Force told me recently that when he took children out of "manufacturing or mechanical establishments" because they had not attended school as the law requires, it by no means followed that such children were sent to school. The parent, disturbed that the children could not work in the mill, allows them to play in the street; and though the detective can bring an action against the owner of the mill and against the parent of the child for disregard of the law relative to employment, he can bring no action against the parent for not sending his child to school.

But notwithstanding the unfavorable circumstances of many of the towns, and the discouragements under which the committees labor, I think I see a marked advance. The teaching is becoming more rational, the committees more liberal in their views, the teachers more earnest in their work, and both committees and teachers more thoroughly alive to whatever promises better results. Would that this were true of all; but some are so well satisfied with that whereto they have already attained, that further effort seems to them unnecessary.

By the reduction made in the number of Agents last May, the lines marking out sections to each were practically obliterated, and I have therefore, in addition to the towns named above, visited twenty-five or thirty towns in different parts of the State on account of meetings of school committees, or to find places for institutes and make arrangements for them, and to enlist the sympathy of committees in the neighboring towns and secure the attendance of their teachers. I have attended nine institutes the last three months, but will speak particularly of only the four of which I had special charge. These were the two in Worcester County, one at West Brookfield and one at Westborough; one in Middlesex, at Concord; and one in Essex, at Bradford.

Seventy-two towns were represented in these four institutes by seven hundred and twenty school officers and teachers, beside a large number of interested spectators. The attendance upon each was as follows:—

At Concord, including about 100 from the Normal School at Framingham,	220
At West Brookfield,	168
At Bradford,	172
At Westborough,	160

There had been no institute at Concord since 1847, thirty years; none at Westborough since 1858, nineteen years; and there had never been one at Bradford or West Brookfield. The school committees of these towns gave their assent to the institutes, some hardly recognizing the difference between a teachers' institute and a meeting of a county teachers' association; some from a willingness to bear their share of any burden the general good required; some from a faint remembrance of benefits received from one held years before; and some from the feeling that teachers are overworked, and that a holiday would be both a relief and an advantage to them. But the interest awakened among their own teachers changed the burden into a privilege, and the kind and amount of work done and required dispelled the idea of a holiday. The institutes increased in interest until their close, and requests came in from school committees in attendance for institutes in their towns next year, or even this year, if it were possible to arrange for them.

The attendance was large, and while it could not probably be too large for the general purpose of giving a new impulse to our Common Schools and awakening an interest in education,—results greatly to be desired and to be prized,—it was, I think, too large for the best instruction of the teachers, and for the immediate effect upon them and their schools. It was also variable. In many instances the schools in the neighboring towns were suspended for only a part of the time, sometimes for only a single day, and the consequence was that upon the last day the institute became unwieldy, and an adjournment to a larger room was rendered necessary.

A review of the last three months' work in institutes has brought me to these conclusions:—

That while large institutes are better for the general purpose referred to above, one numbering from fifty to seventy does the best work for the teachers;

That if double that number is probable, it is better to hold two institutes in towns near to one another, and, for the sake of economy, at the same time;

That an institute should be held for only so many days as the school committees will allow their teachers to attend; and—

That towns having as many as forty or fifty teachers would be more benefited by having the conductors of the institutes spend a day with those teachers in their own towns, making a home institute, than by attending a general institute.

Respectfully submitted.

E. A. HUBBARD.

SPRINGFIELD, December 10, 1877.

REPORT OF JOHN KNEELAND.

Gentlemen of the Board of Education :

During the first four months of the present year, I labored in your service upon the same general plan as last year. I visited most of the towns in Plymouth County, and a few in Norfolk; and attended educational meetings in two other counties. The whole number of schools visited was one hundred and eighty-nine. Conferences were generally held with committees and teachers; but only a few opportunities for public meetings offered. The desire was expressed in several cases for such meetings at a different season of the year, and some appointments were accordingly made. As soon as it was known that the Board was compelled to lessen its agency-work, these appointments were cancelled.

Excepting in rare instances, the members of the various committees gave me a cordial welcome. There was an evident desire to learn the comparative standing of their respective schools. Much could often be said in the way of recognition of positive merits, and many suggestions could be made in regard to improved methods of management and teaching. The question was frequently asked by committees, "What, under the circumstances, can we do better?" The condition of things was not satisfactory to them; but how an improvement could be brought about, with the scant means at their disposal, did not readily appear. It is certainly not one of the least advantages of this agency-work, that it often gives the answer to this and like questions from a wide survey of different classes of schools in all their varying circumstances. The criticisms that come from a comparison with an ideal standard are easily brushed aside; but not so those which are suggested by an actual accomplishment in a like neighborhood, and under like conditions.

My visits to the schools were uniformly pleasant. The entrance of a stranger into a school not often visited causes some embarrassment to teachers and scholars. But your Agents do not long remain strangers. Confidential relations become soon established. There were but two or three instances in which the school visited did not frankly reveal its spirit and work. Nor was the questioning all on one side. Much that I said and did in the school-room was in answer to the questions of teachers and scholars. Generally, the more wide-awake and progressive the school, the greater the demands made upon me.

Condition of the Schools.—Some of the schools I saw can certainly be classed as excellent. They are blessed with exceptional teachers, working under conditions more or less favorable. But whatever the conditions, it was manifest that it was the teacher who made the school. The great majority of the schools may be accounted as fair. They are well governed, and are doing some fine work; but also some inferior work. Sometimes it was noticed that in most of the schools of a town the reading was poor; again, in a large number of schools, it would be found that the scholars had gained no facility in the correct use of language, and the tests applied brought to view not only bad grammar, but bad spelling; in many schools, also, arithmetic was made so much a matter of the mere solution of a certain class of examples according to certain text-book methods, that the attempts to perform such arithmetical work as is required in common life were failures; in a very large number of schools there were no exercises having for their object the cultivation of the observing faculty, and the getting knowledge of the natural world; and in the greater part of the schools there was no drawing of any account. Still, as has been indicated, in these same schools many things were well done. The general aspect of the schools was pleasing, and there was good evidence of intellectual and moral life. But there was another class of schools,—happily, not large,—under teachers clearly incompetent, lacking knowledge or power to teach or control. These schools are tolerated in some localities because of kind feeling towards the teacher, the determination to employ a resident of the district, the supposed inability to pay a better teacher, or the ignorance of a better state of things. The general observation may be added, that the number of schools is by no means small which are conducted upon the principle that the ability to solve the examples in the arithmetic, gives the art of computing quickly and correctly in all the business of life; that the power to read certain selected pieces according to directions, after long practice, secures the intelligent reading of books and newspapers; and that the knowledge of parsing and analysis according to the forms and nomenclature of some text-book is the right understanding and use of language. Not yet is the tendency to fall into mechanical methods, and run on in the text-book grooves, heroically resisted by all teachers.

Supervision.—Whether the supervision is general or local will appear at once in going from school to school in any town. Where it is local,—one member of the committee taking charge of one school or group of schools, a second member another, and so on,—a great difference will generally appear in the schools. In one the instruction will often be systematic and effective; in another, one-sided and weak. But when the supervision is general, all the schools will be found working upon the same plan, and no one allowed to fall far behind the others. Of the towns last visited, Cohasset and Hingham gave good evidence, in the condition of their schools, of the competent superintendence they have enjoyed for a series of years. Quincy furnishes a striking example of what can be accomplished, even in a short time, through the right kind of superintendence. Two years ago the schools there were about on a par with those of the average town. In less than a year after they were placed under the charge of Col. F. W. Parker, the teachers had become indoctrinated with his ideas and methods, and had caught his enthusiasm. In consequence, the schools were wonderfully transformed. The Primary Schools deserve special mention. I made a careful comparison of their methods, and the results obtained, with those of the best Primary Schools I knew, in town or city, and was surprised at the general superiority of the Quincy work.

Improvement of the Public-school system.—The necessity of attempting to accomplish three things for the improvement of the Public Schools can hardly fail to impress itself upon any one familiar with their present condition: *First*, a careful and orderly statement of what must be done in the schools, and for what purpose, with hints as to methods; *second*, a full supply of teachers who have the necessary knowledge and aptness for the work to be done; and *third*, the establishment of a competent, and inspiring, and authoritative supervision.

Respectfully submitted.

JOHN KNEELAND.

BOSTON, December 1, 1877.

FINANCIAL STATEMENT.

FINANCIAL STATEMENT OF THE BOARD OF EDUCATION.

APPROPRIATIONS FOR NORMAL SCHOOLS.

Dr.					Cr.	
1877.	Framingham School—			1877.	Appropriation, ...	$76,000 00
	Salary of principal, ...	$2,500 00				
	Salaries of assistants, ...	7,330 76				
	Care of building, repairs, and furniture, ...	1,279 96				
	Fuel and lights, ...	451 81				
	Books, stationery, advertising, etc., .	503 13				
	Apparatus, etc., ...	31 27				
	Contingent, ...	63 75				
			$12,160 68			
	Westfield School—					
	Salary of principal (ten months), .	$2,500 00				
	Salaries of assistants, ...	7,234 50				
	Care of building, repairs, etc., . .	1,237 39				
	Fuel and lights, ...	370 60				
	Books, stationery, advertising, etc., .	465 64				
	Apparatus, etc., ...	46 09				
	Contingent, ...	42 92				
	School of Observation, . . .	500 00				
			12,397 14			
	Bridgewater School—					
	Salary of superintendent, . . .	$3,000 00				
	Salaries of assistants, ...	9,800 03				
	Care of building, repairs, etc., . .	–				
	Fuel and lights, ...	200 00				
	Books, stationery, etc., . . .	–				
	Apparatus, etc., ...	–				
	Contingent, ...	–				
			13,000 03			

Salem School—					
Salary of principal,	$3,500 00				
Salaries of assistants,	8,875 86				
Care of buildings, repairs, etc.,	321 57				
Fuel and lights,	350 00				
Books, stationery, etc,	–				
Apparatus, etc,	67 90				
Contingent,	45 00				
		$13,160 33			
Worcester School—					
Salary of principal,	$3,000 00				
Salaries of assistants,	7,810 00				
Care of buildings, repairs, etc.,	341 65				
Fuel and lights,	472 24				
Books, stationery, etc.,	784 54				
Apparatus,	208 60				
Contingent,	167 96				
		12,784 99			
Normal Art-School—					
Salary of principal (in part),	$1,250 00				
Salaries of assistants,	8,415 00				
Contingent expenses,	4 04				
		9,669 04			
		$73,172 21			$76,000 00

FINANCIAL STATEMENT OF THE BOARD OF EDUCATION—CONTINUED.

SALEM NORMAL SCHOOL

DR.						CR.
1877.				**1877.**		
April 30,	A. G. Whitcomb, school furniture, .	$222 50			Appropriation for desks, furniture, painting, piano, fence, and grading, ...	$979 56
	H. F. Miller, piano, ...	200 00				
	T. I. Gifford & Co., furniture, . .	44 50				
	D. Henderson, painting, . . .	12 56				
Aug. 21,	Z. Goodell, fences, ...	354 72				
21,	H Sleeper, grading, ...	139 50				
21,	T. I. Gifford, fence, ...	2 70				
21,	C. H. Flint, fence, ...	1 12				
			$977 60			$979 56

WESTFIELD NORMAL SCHOOL.

1877.				**1877.**		
	Town of Westfield, sidewalks, . .	$152 70			Appropriation for painting, fence, refitting kitchen, improvement of grounds, and exchange of piano, ...	$1,309 97
	Walker, Pratt & Co., refitting kitchen and laundry, ...	194 77				
			$347 47			$1,309 97

FRAMINGHAM NORMAL SCHOOL.

1877.	Walworth Manufacturing Co., heating apparatus,	$567 09		**1877.**	Appropriation for heating apparatus, repairs and improvement of grounds, and exchange of piano,	$1,325 00
	E. W. Sears, mason-work,	63 81				
	H. F. Miller, piano,	250 00				
	Geo. Graham, painting,	284 14	$1,165 04			$1,325 00

APPROPRIATIONS FOR STATE AID.

1877.	Treasurer's checks—			**1877.**	Appropriation,	$4,000 00
June 22,	Ellen Hyde, Framingham School,	$400 00				
	J. G. Scott, Westfield School,	400 00				
	D. B. Hagar, Salem School,	400 00				
	A. G. Boyden, Bridgewater School,	400 00				
	E. H. Russell, Worcester School,	400 00	$2,000 00			
1878.						
Jan. 11,	Ellen Hyde, Framingham School,	$400 00				
	J. G. Scott, Westfield School,	400 00				
	D. B. Hagar, Salem School,	400 00				
	A. G. Boyden, Bridgewater School,	400 00				
	E. H. Russell, Worcester School,	400 00	2,000 00			
			$4,000 00			$4,000 00

FINANCIAL STATEMENT OF THE BOARD OF EDUCATION—CONCLUDED.

APPROPRIATION FOR AGENTS.

DR.						CR.
1877.				**1877.**		
	A. J. Phipps, salary and travelling expenses,	$935 83			Appropriation,	$8,500 00
	John Kneeland, salary and travelling expenses,	908 03				
	Geo. A. Walton, salary and travelling expenses,	2,590 32				
	E. A. Hubbard, salary and travelling expenses,	2,599 65				
	Walter Smith, salary and expenses,	1,288 29				
			$8,322 12			$8,500 00

TEACHERS' INSTITUTES.

DR.						CR.
1877.				**1877.**		
	Concord Institute, 2 days,	$128 82			Appropriation,	$3,000 00
	Middleborough Institute, 4 days,	153 30				
	W. Brookfield Institute, 4 days,	200 76				
	Bradford Institute, 2 days,	139 89				
	Amherst Institute, 4 days,	271 44				
	Westborough Institute, 2 days,	119 57				
	Holyoke Institute, 3 days,	206 29				
	Franklin Institute, 4 days,	223 03				
	Harwich Port Institute, 4 days,	203 48				
			$1,646 58			$3,000 00

EXPENSES OF MEMBERS OF THE BOARD.

1877.				**1877.**		
Dec. 27,	A. A. Miner,	$14 33			Appropriation,	$400 00
1878.						
Jan. 1,	C. C. Esty,	40 00				
3,	C. C. Hussey,	57 45				
3,	Henry Chapin,	17 77				
5,	William Rice,	70 25				
			$199 82			$400 00

POSTAGE, PRINTING, STATIONERY, ETC.

1877.				**1877.**	Appropriation,	$3,000 00
	Postage, printing, stationery, expressage, etc.,		$458 60			$3,000 00

OLIVER WARNER,
Treasurer of the Board.

BOSTON, January 10, 1878.

APPENDIX.

APPENDIX.

[A.]

COURSE OF STUDIES ADOPTED BY THE HAMPSHIRE EAST ASSOCIATION OF SCHOOL COMMITTEES.

The Publishing Committee consisted of William B. Graves and W. H. Beaman, Amherst; C. L. Washburn, Belchertown; N. D. Potter, Enfield.

The Committee express their appreciation of the services of the Secretary and Agents of the Board in making this course of studies.

First Grade, or First Year.

Books of reference, notes, etc.

Reading.

How to teach.

The unit of reading is the sentence. Teach the sentence to be read, by teaching first the ideas named by the words, and the thought expressed by the sentence. Then teach the words and the sentence.

Calkins.

The first sentences taught should be expressions of thoughts of familiar things. In preparing the pupil for reading, teach those objects described in his reading-lesson.

Sheldon.

The teacher will be guided in conducting the reading exercise, by a knowledge of the requisites of good oral reading, which consists in reading so as to be heard, understood, and felt. He should train his pupils with reference to these requisites.

Spelling.

Pencil, slate, paper.

Depend largely upon pupils' copying words from the board and reader; copying in script hand. Secure care in copying, and correct any errors made.

Numbers.

Combine to twelve; figures.

Present with various objects numbers to twelve, teaching pupils to distinguish at sight any collection to six; to form all combinations to twelve in addition, subtraction, multiplication, and division; to represent the numbers by figures and letters, and to use the coins for one, two, three, five, and ten cents.

Language.

Greene.
Harvey.
Apgar.

Prepare the pupils for elementary compositions, by teaching familiar objects, such as animals, plants, minerals. Teach these objects first as wholes, and give names; then teach parts, qualities, and uses, with their names.

Vocal Music.

National Music Teacher.

Awaken and develop the musical powers, by teaching carefully a few well-chosen songs by rote. The objects to be attained are—

1. The awakening of the musical faculties.
2. Cultivation of the voice and ear.
3. Preparation for singing by note.

Pupils should imitate the teacher in position of body, articulation of words, which should be very distinct; also in quality of tone, which should be as soft and sweet as possible.

Teach the scale as a whole ascending and descending.

Drawing.

Smith's Primary Manual.

Object-lessons, using points and straight lines for training the mind to use the eye and the hand.

Teach names of lines drawn in different directions. Make combinations of lines. Teach angles, and names of different kinds of angles, and make combinations of angles, to give variety to the work.

Gymnastics.

Mason.

Two or three times each session, give simple exercises for the physical training of different parts of the body. These may be given with counting and with motion songs.

General Exercises.

Human body, structure and uses of various parts, cleanliness, etc. Moral lessons, by stories and incidents. Lessons on form.

SECOND GRADE.

Reading.

The Nursery.

Second Reader, with other books of similar grade. Method of teaching, same as in first grade. Teach the names of the punctuation-marks and the marks used in printing, as *, †, ‡, §, ‖, ¶.

The Primary Arithmetic, through simple numbers, may also be used as a reading-book.

Spelling.

Slate, paper.

The spelling-lessons should consist of words taken from the reading and the language lessons. The pupil should have the word as a whole in his mind before he attempts to spell it; the spelling should be conducted largely by the written method.

Penmanship.

Slates ruled.

Exercises on paper or slates ruled for the purpose, using pencils at least four inches long. Form with care the letters—

i, u, n, m, x, v, w, o, e, c, r, s.

Numbers.

Combine to twenty; also decimally.

Combine numbers through twenty, as in first grade, teaching all the elementary combinations. Teach the decimal applications thus:—

9	19	29	8	18	28	9	19	29
2	2	2	3	3	3	3	3	3
—,	—,	—, etc.,	—,	—,	—, etc.,	—,	—,	—, etc.
11	21	31	11	21	31	12	22	32

Write and read numbers to 100 expressed with figures and letters. Practice largely upon single-column additions with proof by subtraction.

Pupils form multiplication-tables.

Teach the pupils to form the multiplication-tables for 2's, 3's, 4's, and 5's. Teach multiples and measures. Combine adding with multiplying; thus, multiply 5, 7, 9, 3, 1, 8, 4, 2, 6, each by 2, and add 1 to each product (operate from the right of the line). Again, multiply by 3 and add 1; by 3 and add 2, etc.

Combine also subtracting with dividing; thus, 12, 15, 6, 21, each contains how many 3's? Secure accuracy for intellectual and moral effect.

Language.

Objects and pictures.

Exercises same in kind as in first grade. Use objects, and pictures when objects cannot be obtained, in preparing the pupil for oral and written descriptions. Require exact answers in all exercises; and in general full answers. Have the pupils describe from memory what they have before observed.

Vocal Music.

Additional songs by rote. Continue the practice of the scale as a whole. Also by degrees, as follows: 1, 2—2, 1; 1, 2, 3—3, 2, 1; 1, 2, 3, 4—4, 3, 2, 1, etc. Daily practice, with careful attention to a distinct articulation and soft, sweet quality of tone. Ascertain how many can sing the scale correctly, alone. Also teach the staff, clef, long and short notes, etc.

Drawing.

Geometric forms.

Teach mathematical forms, triangle, square, pentagon. Show models; pupils draw these forms.

Manual.

Simple dictation exercises, introducing design, the number of lines limited. Pupils repeat these forms, drawing from memory. Pupils make original designs with a limited number of lines; have the best of these designs transferred to paper or blank-book.

Gymnastics.

Habits of attention.

Continuation of same kind of exercises as used in first grade. Physical training should be so conducted as to cultivate the attention, and to give grace and strength by calling into equal exercise the muscles on both sides of the body.

General Exercises.

Train upon the elementary sounds :—

Correct individual faults privately.

	(Lips.)	(Teeth and Tongue.)	(Palate.)	(Throat.)
Atonic,	p.	t.	ch.	k.
Subtonic,	b.	d.	j.	g (go).
Atonic,	f.	th (thin), s (so).	sh (shall).	
Subtonic,	v.	th (the), z.	zh (azure).	
Liquid,		l, r.		
Liquid nasal,	m.	n.		ng.
	w.		y.	h.

THIRD GRADE.

Reading.

Third Reader, with other books containing reading-matter of a similar grade. Lead the pupils to analyze reading-lessons, first for general subject, then for subject of each paragraph, then for emphatic word in each sentence.

Analysis of lessons.

Spelling.

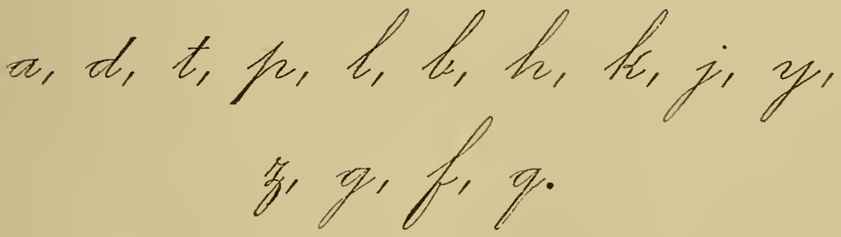
Spell chiefly by writing; if the oral form is used, spell words previously written, and with a correct and rapid articulation.

Oral spelling.

Penmanship.

As in second grade. Form the letters—

Slate and paper.



Numbers.

Write numbers to 1,000 in figures. Analyze numbers, thus: 10 = how many units? 100 = how many tens? Units? 34 = how many tens with how many units? 360 = how many tens with how many units? 1360 = how many hundreds? How many tens? etc.

Analysis of numbers.

Add and multiply numbers to 1,000, multiplier to consist at first of one term, then of two terms. Subtract and divide with minuends and dividends to 1,000, divisors to 12. Make applications to United

Combine adding, subtracting, multiplying, and dividing.

States money and to measures, both common and metric, of length and capacity, using the coins and currency; also the meter and the liter.

Language.

Oral and written compositions, with objects and pictures for imagination.

Descriptions of objects observed, as in previous grades. Also require descriptions of the products of memory and imagination. Teacher may prepare the pupil for such descriptions by giving an account of some scene or event the teacher has observed or imagined, or by leading the pupil to imagine for himself. The pupil may then describe, in his own language, the thoughts that were awakened by the story of the teacher, or the thoughts his own imagination has created.

Capitals.

Teach uses of capitals, and some of the uses of the period.

Elements of Geography.

Observe physical features in vicinity of school.

Draw plans.

Object-lessons.

Prepare the pupil for the future study of geography, by lessons on form, size, and place. Teach the pupil to represent the position and relative size of objects in pictures and plans he is taught to construct, as of the school-room, a plot of ground, the school-yard, etc. Walk with him into the fields, and teach objectively what is meant by the terms surface, slope, hill, mountain, valley, summit, river, right and left bank, source, mouth, lake, shore, etc. Make the pupils familiar with the school globe and all its parts, with their names. Call attention to the different lengths of the different days and nights of the year. Have the sun watched as it apparently moves to the north and south, and have the phenomena observed that will in the future be used as the data from which will be derived a knowledge of the form of the earth, its motions, and its relations to the other heavenly bodies.

Vocal Music.

Same in kind as in preceding grades. Review the work of former grades. Represent some of the easy songs and exercises already taught by rote, in notes upon the staff upon the blackboard, and let the pupils practice singing the same by note. Also represent the scale upon the blackboard, and give limited practice upon the same.

Drawing.

Black-board and blank-books, alternately.

Curved lines: circle, ellipse, ovoid, cone, spiral; show models. The drawing of these forms requires great care and much practice, and the skilful teacher will provide against monotony by applying the forms in representing simple *objects*, thus introducing object-drawing.

Gymnastics.

As in previous grade, with counting, and with music, when practicable.

General Exercises.

Attend to quality of voice.

Train upon the elementary sounds.

Long.	Short.	Compound.
e (me.)	i (pin.)	i (pine.)
a (may.)	e (pen.)	oi (oil.)
a (bare.)	a (at.)	ow (how.)
a (far.)	a (ask.)	u (use.)
u (fur.)	u (up.)	
a (fall.)	o (on.)	
o (tone.)		
oo (tool.)	oo (foot.)	

Teach trades and occupations.

Fourth Grade.

Reading.

Recitations

Third Reader, with other books containing reading-matter of similar grade. Lead the pupils to analyze reading-lessons, as in third grade. Regular and careful training in recitation of selections committed to memory. Commit only passages worth remembering. In the preparation of his reading-lesson, the pupil should make frequent use of his dictionary for pronunciation. Secure accuracy of pronunciation for all words used in reading or other lessons. Concert reading should not be employed; phrases and sentences,

Dictionary,

No concert reading.

however, may be repeated in imitation of the teacher, for training of the voice in pitch, force, quality, etc.

Spelling.

As in previous grades, chiefly by writing.

Penmanship.

Pen and ink; use wipers. Teach with black-board. Pupils criticise teacher's forms.

Write with the pen, two books. Secure a good position of the body, good penholding, and practice arm and finger movements upon waste paper. Teach all the pupils of the school at once, and use the same copy for all, if possible. Pupils should criticise their own and one another's writing. Criticism should be generous, especially noticing excellences.

Arithmetic.

Book definitions used. Pupils use book in recitations.

Commence written arithmetic. Define terms, and perform examples under fundamental rules, using decimals as well as integers, deriving the rules from the operations performed. Practice upon problems not found in the book. Omit dividing by factors and using multipliers and divisors having decimals. Read and write numbers to ten millions. Continue, into fractions, the reading of Intellectual Arithmetic, with the analysis of practical problems in multiplication and division.

Language.

Write on familiar subjects.

Let the pupil give the analysis of reading-lessons studied prior to oral reading. Let him also write daily impromptu compositions upon familiar subjects, with reference to forming a habit of ready writing.

Geography.

Use globe and maps.

Teach the earth as a whole; that is, its form, size, motions, and relations to other heavenly bodies. Teach its parts, lands and waters, mountain systems and river systems, and construct maps of the hemispheres.

Vocal Music.

One on any degree of staff.

Review work of preceding grades. Teach names of notes, and their relative length, using whole, half, quarter, and eighth notes. Give practice in beating two, three, and four part measure. Practice daily, with attention to articulation and quality of tone. Pure, sweet tones cannot be acquired if pupils are allowed to shout in any recitation.

Drawing.

Free-hand drawing from flat copies. Dictation exercises by teacher. Memory drawing.

Bl'kboard, paper, book.

Gymnastics.

With counting and music.

General Exercises.

Plant forms. Human body. Daily exercises in vocal culture.

Apgar. Hooker.

FIFTH GRADE.

Reading.

Fourth Reader, with some work on history of United States. Teach analysis of lessons, as in fourth grade. Recitations of selections continued. Dictionary used for pronunciation and signification of words. Reference-books for a knowledge of persons, places, and events. Read selections from newspapers, and from other than reading-books.

Read history. Dictionary, for each pupil. Newspaper.

Spelling.

Spelling-book used with readers for words. Spell by writing; or, if by oral method, prepare spelling-lessons by writing as previously directed.

Penmanship.

Use writing-books. Teach as in preceding grade. Train in arm and finger movements. Practice much on waste paper for freedom of movement.

Arithmetic.

Review from the beginning, teaching reasons for the processes. Give many practical problems and other tests not in the book, as indicated in preceding grade. Illustrate and teach all topics to fractions. Require

In elementary arithmetic reasons for process should be taught, but need not always be repeated by pupil.

the pupil to derive the data of problems by his own measurements. Let oral arithmetic be kept just in advance of written. Require analysis of practical problems. Teach processes at first, but not require statements, unless the pupil fully comprehends, and can make them intelligently.

Language.

See ref. book.

Language-lessons from the book. Analysis of sentences, composition-writing a daily exercise, chiefly on the slate, rapid, and with reference to acquiring facility of expression. Write from memory the anecdotes read.

Geography.

Outline maps. Mass.

Teach pupils to construct maps by scale. Analyze the Western Continent, studying the mountain and river systems. Study New England and the Middle States topically. Massachusetts in detail. Illustrate and define terms used.

Vocal Music.

Relative and absolute pitch.

Review topics studied in preceding grades. Give daily dictation exercises upon the sounds of the scale, the teacher calling scale names 1, 2, 3, etc., and the pupil singing syllables, Do, Re, Mi, etc. Practice five minutes daily in this way until the class can give promptly any sound called for, after which represent the scale upon the staff and give practice upon the same, the teacher using the pointer. Teach relative and absolute pitch as represented upon the staff, using G clef only, and to read in key of C.

Drawing.

Teacher to have plan.

Free-hand, memory, original design.

Gymnastics.

With counting and music.

General Exercises.

Plants.

Elements of botany in spring and fall terms. Pupils encouraged to make collections of plants, and to learn the distinguishing marks and the names of all the flowering plants growing in the vicinity of the school. Books of reference, Youmans's Manual, Gray's School and Field Botany. Vocal drill.

SIXTH GRADE.

Reading.

Fourth Reader continued with other reading as in previous grade. Analysis of lessons and recitations as previously.

Recitations.

Spelling.

Spelling with especial attention to syllabication. Geographical, historical, and biographical terms to be spelled. Do not allow pupils to guess out the spelling of words. If words have all been previously written, the spelling may be largely oral, but make frequent reviews by writing.

Geographical and other words.

No guessing

Penmanship.

Copy-books adapted to grade. Observe previous directions. Teach one thing at a time.

Practice on waste-paper.

Arithmetic.

Through fractions, common and decimal. Much practice upon problems outside the books.

Practical work.

Language.

Analysis of sentences. Impromptu written exercises daily to secure freedom of expression. Letter-writing, with attention to address, date, etc. Read passages supplying synonyms for words and phrases specified.

Logical analysis.

Diagram.

Geography.

Complete the geography of the United States, with the British Provinces and Mexico. Teach topically.

Group States for productions.

Vocal Music.

Continue dictation exercise, and practice with pointer, upon the scale. Prepare for two-part singing by having one-half of the class sing 1 while the other half sing 3. Also 2 and 4, 3 and 5 in the same way. Teach any two-part exercises and songs by note, *always* teaching carefully the lower part first.

Two-part singing.

Drawing.

Object-drawing. Models.

Work of previous years continued; add object-drawing and the drawing of models from the flat.

Gymnastics.

With counting and music.

General Exercises.

Elements of botany continued. Recognize woods by buds, pith, bark, etc.

Some family of birds taught.

Human body.

SEVENTH GRADE.

Reading.

Vary the exercises.

Fifth Reader. Reading-exercises conducted after manner already explained. To vary the exercises, each pupil allowed to select a paragraph for his own reading. Lessons carefully studied before reading. Much practice required before recitations to enable the pupil to acquire the power of expressing thoughts and emotions designed to be excited by the author. Train the pupil to keep the wants of his hearers constantly in mind as he reads. Continue recitations of selections.

Spelling.

Observe directions given in sixth grade.

Penmanship.

Copy-book adapted to grade; teaching as before.

Arithmetic.

Use meter, liter, and other units of metric system.

Teach the principles of compound numbers and a few of their applications, omitting the others. Teach the metric system, and commence percentage.

Language.

Compositions by rules.

Continue analysis, grammatical forms, and derive rules for the syntax of sentences. Correct false syntax. Letter-writing continued. Construct compositions in accordance with a method that has been carefully taught. Subjects of compositions suggested by the teacher.

Geography.

Make one map of all the continents and oceans on Mercator's projection. Teach North and South America topically. Use parallels and meridians in drawing. Avoid details.

Carver.

History.

United States. Avoid details. Do not require the pupils to remember many dates. Teach topically, and have recitations given in connection with illustrations on the blackboard. Pupils recite by topic.

Recite by topics.

Vocal Music.

Teach chromatic scale by sharps and the different major scales; viz., G, D, A, and E. Represent these scales, with their proper signatures, upon the blackboard, and give daily dictation exercises upon them, the teacher using the pointer.

Transposition.

Drawing.

Teach principles of design; pupils illustrate. Freehand and memory drawing continued. Forms on larger scale.

Principles.

Larger scale of work.

Gymnastics.

As previously conducted.

General Exercises.

Natural history. Analysis of plants and animals continued for the marks of future classification. Elementary exercises preparatory to physiology. Encourage the pupil to make collections. Drill in vocal exercises.

EIGHTH GRADE.

Reading.

Fifth Reader. Observe previous directions. Make, each week, a digest of the news, which shall be read by the pupils. In the exercises preliminary to reading, let pupils give reasons for emphatic words. Historical and biographical facts continued, with a

Historical and biographical notices.

Recitation.

sketch of the author read, and selections from his works. Continue recitations.

Spelling.

Blank-books.

Observe previous directions; write with pen. Spell words used in geography, arithmetic, and other branches.

Penmanship.

Business forms.

Copy-book adapted to grade. Observe previous directions. Write business forms, notes of invitation and information.

Arithmetic.

Continue to add, etc.

Percentage with simple interest. Oral arithmetic finished. Practice upon practical problems outside the book, with additional work in the fundamental rules a few minutes daily.

Language.

Analysis.
Write forms.

As in previous grade. Continue analysis and composition; letter-writing; bills, advertisements, telegrams, etc. False syntax corrected.

Geography.

Classify in teaching.

Teach Europe, Asia, and Africa; plans as for seventh grade. Teach productions and climate with reference to the physical conditions upon which productions and climate depend. Do not elaborate drawings, but use them chiefly to show relations.

History.

United States completed. See previous directions.

Vocal Music.

Read in any scale.

Review the work of previous grades. Teach chromatic scale by flats, and the scales of F, B^b, E^b and A^b. Practice reading in any scale that has been taught. The pupil should be able to name the pitch of all sounds found in each scale.

Drawing.

Models.
Objects.

Work of previous year continued, and drawing from objects and models.

Gymnastics.

Exercises same in kind as before.

Natural History and Physiology.

Continuation of the study of natural objects for future classification. Study the human body with reference to the systems, as digestive, circulatory, etc.

NINTH GRADE.

Reading.

General reading.

Fifth Reader. Directions as previously given. Read also from standard authors, and give sketches of lives; also read from newspapers and periodicals. Continue recitation of selections.

Spelling.

Make a vocabulary.

Review, selecting words of difficult orthography, avoiding words rarely or never used.

Arithmetic.

Begin algebra and geometry.

Complete the applications of percentage. Continue practice-work outside of book, with reviews. Teach geometry and algebra without a book; teach the general principles for ratio, roots, and mensuration before completing these topics in arithmetic.

Discourage any extended practice beyond the applications of interest in this grade, and the use of higher arithmetics at all times.

Book-keeping.

Single entry. Cash and personal accounts. Accounts with sundry commodities. Interest accounts, including averaging accounts, may be taught here.

Language.

Observe previous directions. Continue compositions, with careful criticisms of forms of expression and arrangement. Encourage pupils to read some good authors.

Geography.

Physical geography.

Teach the forms of the lands and the causes of the forms; the phenomena connected with the surface and their causes. Teach causes of winds and currents. Teach climate, and all the causes that effect it. Teach the forms of life that exist in different latitudes.

History.

Constitution of United States, with biography of distinguished persons.

Vocal Music.

Review work of previous grades. Sing two and three part songs, and of the eight keys learned, always teaching first the lower parts.

Drawing.

Applied design.

Model and object drawing continued. Teach applied design. This leaves for the High School perspective, geometrical drawing, historical ornament, and drawing from casts.

Gymnastics.

Same as in previous grade, with variety of exercises.

General Exercises.

Prang, Apgar, Hooker, etc.

Plants, simple classifications, marks to distinguish. Animals and minerals as above. Elements of physiology. Review secretion, and teach practical hygiene.

Now begin to teach natural history as a science, under the topics, botany, zoölogy, mineralogy.

GENERAL SUGGESTIONS.

OBJECT-LESSONS.

Object-lessons suggested in reading-lessons, plants, etc.

In the primary grades, a series of object-lessons will arise from the lessons taught. For instance, the reading-lessons must be taught by teaching objectively the objects named, and the qualities of objects described. Thus a series of lessons will arise suggested by the reading-lessons themselves. All the significant words used in any primary exercise must be objectively taught. The lessons arising in this way may be called—

The First Series of Object-lessons.

Lessons on form, color, etc.

The teacher should now look forward into the Intermediate and Grammar schools, to find what preparation the pupil will need that he may enter these schools, and pursue the course of studies designed for them. As, in this grade, those qualities of objects by which they are to be classified will be observed, the pupil will require a thorough knowledge of qualities; a systematic course on qualities in the order, form, color, size, place, etc., should be given. This will constitute the—

Second Series of Object-lessons.

Minerals.
Plants.
Animals.

In the intermediate and grammar grades, the pupils being prepared, may begin to analyze objects for the marks of classification. Lessons on objects for future classification will constitute the—

Third Series of Object-lessons.

Prepare for scientific study in lower grades.

These lessons are to be given with special reference to the future sciences to be founded upon them. Care should be taken to teach those marks that are to be used in the future classification, and in the order in which they will be used. In the primary grades teach the first two series; in the intermediate grade the third series.

All teaching should be oral and objective. The aim should be to present to the mind of the pupil just what we would teach him.

GOVERNMENT.

Good order exists in a school when all the pupils are performing their work without unnecessary noise. Love and sympathy, guided by common sense, are the surest, as they are the noblest agencies in the government of the school.

Self-government is the test, as it is the end, of school government.

HEALTH OF THE PUPILS.

Pure air.
Lighting.
Positions.

The teacher should feel responsible for the health of his pupils, so far as the sanitary conditions of the school-room are concerned. He should *secure pure air and avoid drafts at all times;* he should avoid all unnecessary chalk-dust, and be careful that the eyes of the pupils are not injured by strong light from the front or sides. He should secure correct position in study and recitation, and not omit physical exercises.

MORALS AND MANNERS.

Character of some kind will result from all teaching; and the kind depends on the method and the spirit of the teaching; the teacher should present to the pupil occasions for discovering, and stating the truth, and especially should the ingenuity of the teacher be employed to find expedients that will call into exercise the better affections of the pupils. He should make occasions for giving brief, pointed lessons on truthfulness and politeness, on the proper treatment of animals, on punctuality, obedience, on the treatment of property, on tale-bearing, respect for the aged and superiors, on patriotism, on temperance in eating and drinking, on coveting or taking another's property, on good behavior in public places, on purity of thought and action, on the power of the will, on the force of habit, etc., etc.

Every instance of ill manners in the intercourse of the children with one another, as well as with the teacher and the general public, should be corrected.

ORDER OF EXERCISES.

Every teacher should have posted up in the school-room an order of exercises for each day in the week, assigning a definite time for the beginning and ending of each exercise, and, with rare exceptions, should adhere strictly to it.

The time for study, equally with that for teaching and for recitations, should be provided for in the order of exercises.

In general, larger provision should be made for General Exercises in mixed schools than in graded schools.

Classes in the Schools.

It is desirable to have two classes pursuing the same studies, and but two classes in a school under one teacher; but where a larger number is necessary, every effort should be made to reduce the number as much as possible, certainly to three or four.

Limitations to Course of Studies.

A course of studies can simply indicate the amount and kind of work to be done in the school. While it should leave the teacher with no doubt as to what is required, it should not be so extremely minute as to prevent the teacher from exercising his own individuality as to methods. Similar results may be expected in the same grade through varying means. The teacher should carry out the *spirit* of the instructions in a course of studies.

The preceding course includes studies for nine grades, each grade requiring one year. And though some pupils may complete the course in less time, it indicates the maximum for each of the several grades where the schools are kept thirty-six or forty weeks in the year, and under the most favorable circumstances.

Notes.—In the Course "Calkins" refers to Calkins's New Primary Object-Lessons; "How to Teach," to Calkins's book on that subject; "Youmans's," to Miss Youmans's Lessons in Botany; "Sheldon," to Sheldon's Elementary Instruction; "Prang," to the text accompanying Prang's Natural-History Series; "Greene," "Harvey," "Hadley," Lessons in Language by these authors; "Commerce," to Manual of Commerce; "Hooker," to Hooker's Child's Book of Nature; "Carver," to Miss Elvira Carver's Topics in Geography; "Apgar," to Apgar's Natural-History Studies; "Music Teacher," to the National Music Teacher.

[B.]

ADDRESS OF HON. P. EMORY ALDRICH.

Delivered before Massachusetts State Teachers' Association, December 28, 1877.

Mr. President: I have not ventured to appear before this association of teachers for the purpose of discussing questions relating to systems or methods of instruction with which you are familiar and I am not. The single object I have in view is to submit some considerations upon what may properly enough be called the legal or constitutional powers of civil government, as established among us, in relation to the subject of popular education.

What may the State do, and what ought it to do, to provide for and promote the education of the people? *First*, what are we to understand by the term State? With the citizens of a self-governing Commonwealth like ours, the word has no such limited meaning as would satisfy the subjects of a government resting upon a narrower basis than the free consent of the governed.

Nor is the word employed in our question a synonyme for government or administration. The forms of government change; administrations follow each other in rapid succession; the policy of the controlling majority of to-day may be repudiated by that of to-morrow; but the State remains, through all these vicissitudes, unchanged, indestructible, and immortal. France, though rent by a century of revolution and counter-revolution, has never lost its identity; but through and after every convulsion has continued to be the same France still, and, through all changes of dynasties, has maintained its place as one of the States of Europe. And England, whether under the reign of a Tudor or a Stuart, or controlled by the stalwart arm of a Cromwell, has, in the steady growth of a thousand years, no more lost her individuality, than has one of the sturdy oaks springing from her soil and numbering as many years. And to use a single other illustration, this ancient Commonwealth, in the comprehensive and true sense of the term, has been and remained the same State or jural society throughout her colonial, provincial, provisional, and constitutional periods.

A distinguished representative of this State, in a speech of great eloquence and true historical insight, delivered a few months since in the National House of Representatives on the presentation from Massachusetts to the United States of the statues of John Winthrop and Samuel Adams, said, "When John Winthrop died, in 1649, the colony of which he had been the foremost planter was firmly established as a Christian *State*."

And this was true, although, as every reader of our colonial history knows, the colony had then been in existence only nineteen years, and scarcely more than twenty of the more than three hundred towns now found on the map of the State had then been organized, and these twenty were occupied by only a few thousand inhabitants; yet not only had a colony been planted, but a State had been formed: the germinal life of a great commonwealth was already manifest. The college, the public schools, the church, the town-meeting, had all at that early period been instituted, and became, and have ever since remained, great factors in the material and intellectual development of a State which has no superior and few equals among the civil and political communities of men. But let us pursue our definition a little further.

"A nation," says Milton (and the same is true of a commonwealth), "ought to be as one huge Christian personage, one mighty growth or stature of an honest man, as big and compact in virtue as in body, for look what the ground and causes are of single happiness to one man, the same ye shall find them to a whole State."

And Burke affirms that "the State ought not to be considered as a partnership agreement, to be taken up for a little *temporary* interest, and dissolved at the fancy of the parties. It is to be looked on with other reverence, because it is not a partnership in things subservient to the gross animal existence of a temporary and perishable nature. It is a partnership in all *science;* a partnership in all *art;* a partnership in *every virtue*, and in all perfection."

"The State," says Lieber, "is a form and faculty of mankind to lead the species towards a greater perfection." From these brief expositions it will be seen that the State may antedate all specific forms of constitutions and governments; it adopts the one and organizes the other as convenient and, perhaps, necessary instruments for carrying into execution the objects of its own existence.

And it is of this original, necessary, continuous, identical organization of human society, that the question is propounded, "What are its rights and duties in relation to the important subject of Education?" The administration of to-day may have for its immediate and specific duty the completion of some great enterprise of internal improvement, the reorganization of the judiciary, or some other department of government, or the revision and codification of the laws of the State; but these duties are temporary and occasional, and pass away with the doing of them. But the paramount obligation of the State to provide for the education of each and every succeeding generation grows out of an imperative and never-ending duty. If the ground and reason of this duty be demanded of us, we have only to answer, that it arises out of the correlative right, possessed by the State to do, and require to be done, whatever is necessary for its orderly development and its highest good. And for these purposes the State is clothed with powers which it cannot omit to exercise, without moral guilt, any more than the individual citizen can neglect to employ the faculties with which he is endowed for his own welfare and that of those with whom he is associated in the various relations of life. Now, it is among the common-places of the subject to remark, that education tends to diminish or prevent vice and crime, and consequent poverty; three formidable evils which imperil the safety and welfare of the State. And therefore, from the simplest application of the law of self-defence, or self-preservation, arise the right and duty on the part of the State to provide for that kind and degree of education which will most effectually guard the State from the consequences of these primal and destructive evils. But the right and duty of the State to furnish the means of education to the people are not to be measured and limited by the law of self-preservation alone. It is not enough to teach the child to avoid vice: he must be taught what virtue is, and how to practice it. That would be a very defective system of education which should expose the wickedness of crime, but fail to make manifest the beauty of loyalty to the State, and the duty of willing obedience to its laws, and a ready acceptance and performance by every citizen of his share of the burdens and responsibility of carrying the State forward in every virtue, and to all perfection.

Let us, then, proceed to consider what that education is, or should be, which it is the right and duty of the State to provide for, and in what manner that right is to be asserted and the duty performed.

It is, I think, no longer regarded as an open question in any of the States of this Union, certainly not here in New England, that primary education should be provided for in public schools, supported by equal taxation, or by a permanent fund supplied by the State, or in part by both.

But passing beyond the primary schools, we come immediately upon what some regard as debatable ground; for there are those, even among the professed friends of popular education, who deny the right to maintain by general taxation, or other appropriations of the public funds, high schools, technical schools, academies, colleges, and universities, which, though open to all alike, are never entered, it is said, except by comparatively few.

And now, leaving that part of the subject, which is not a matter of controversy, to wit, the right and duty of the State to maintain schools for primary education, I affirm, first, that it has been the settled and prevalent policy of these States, as well as of the general government itself, to grant State or governmental support to schools of every grade, from the primary up to and including the university; and, furthermore, that this was the accepted theory and practice of the colonies before the States were organized as they now exist. And, secondly, I shall contend that this policy should not now be abandoned, but, on the contrary, should be continued and extended, to meet the growing necessities of the greatly enlarged and ever-expanding field of human knowledge and acquisition.

I should not feel justified in consuming the time of the Association, this morning, by reading the numerous extracts I have made from the laws and constitutions of the several States, and of the United States, in support of my first proposition. I shall therefore content myself with presenting only a small portion of the proofs from these ample sources of evidence. But first let me call attention to the large and liberal views upon the subject in hand of some of the first minds, who laid so deep and broad the foundations of these States, that no madness of faction, nor lawless spirit of revolution, has yet been able to overthrow them.

These wise builders of empire foresaw that the welfare and continued existence of the State demanded, not only that knowledge of a rudimentary character should be widely diffused among the people, but that public provision should be made for the acquisition of those higher ranges and degrees of knowledge, without which the State can never attain that mighty growth and stature of an honest man embraced in Milton's just description of what a State should become.

In his work on government, John Adams declares that "the instruction of the people, in every *kind* of knowledge that can be of use to them in the practice of their moral duties as men, citizens, and Christians, and of their political and civil duties, as members of society and freemen, ought to be the care of the public, and all who have any share in the conduct of its affairs. The education here intended is not merely that of the children of the rich and noble, but of every rank and class of people, down to the lowest and poorest. It is not too much to say, that schools for the education of all should be placed at convenient distances, and maintained at the public expense. The revenues of the State would be applied infinitely better, more charitably, wisely, usefully, and therefore politically, in this way, than even in maintaining the poor. This would be the best way of preventing the existence of the poor."

Again, he says in the same work: "Laws for the liberal education of youth, especially of the lower class of people, are so extremely wise and useful, that, to a humane and generous mind, no expense for this purpose would be thought extravagant."

"A popular government," says Madison, "without popular information, or the means of acquiring it, is but a prologue to a farce or tragedy, or perhaps to both. Knowledge will forever govern ignorance; and a people who mean to be their own governors must arm themselves with the power which knowledge gives. . . . . No error is more certain than the one proceeding from a hasty and superficial view of the subject: that the people at large have no interest in the establishment of academies, colleges, and universities, where a few only, and those not of the poorer classes, can obtain for their sons the advantages of superior education. It is thought to be unjust, that all should be taxed for the benefit of a part, and that, too, the part least needing it.

"If provision were not made at the same time for every part, the objection would be a natural one. But besides the consideration, when the higher seminaries belong to a plan of general education, that it is better for the poorer classes to have the aid of the richer, by a general tax of property, than that every parent should provide, at his own expense, for the education of his children, it is certain that every class is interested in establishments which give to the human mind its highest improvement, and to every country its truest and most durable celebrity.

"*Learned institutions ought to be favorite objects with every free people.* They throw that light over the public mind which is the best security against crafty and dangerous encroachments on the public liberty. . . . .

"But why should it be necessary, in this case, to distinguish society into classes, according to their property? When it is considered that the establishment and endowment of academies, colleges, and universities are a provision, not merely for the existing generation, but for succeeding ones also,—that in governments like ours, a constant rotation of property results from the free scope to industry, and from the laws of inheritance,—and when it is considered, moreover, how much of the exertions and privations of all are meant, not for themselves, but for their posterity,—there can be little ground for objections from any class to plans of which every class must have its turn of benefits. The rich man, when contributing to a permanent plan for the education of the poor, ought to reflect that he is providing for his own descendants; and the poor man, who concurs in a provision for those who are not poor, that at no distant day it may be enjoyed by descendants from himself. It does not require a long life to witness these vicissitudes of fortune."

The views of Jefferson upon the same subject may be found clearly expressed in a bill early prepared by him for the Legislature of Virginia. It provided for a system of common schools, and also for ten colleges, one for each of the ten districts into which the State was to be divided, and for one university for the sciences. Unfortunately for that great State, this comprehensive system of schools for the education of its people in the lower and higher branches of knowledge was not adopted at the time, and was only in part realized many years afterwards, through the persistent efforts of Mr. Jefferson, in the founding of what is now known as the University of Virginia, and in a very inadequate provision for the support of common schools. These sagacious and far-reaching views as to the necessity and extent of popular education were by no means peculiar to the eminent statesmen and scholars whose words I have quoted, as could easily be shown by liberal quotations from the writings of many of their most distinguished contemporaries. They are the deliberately expressed opinions of men by whose wisdom and foresight states were formed and a nation created, which can only be destroyed when the descendants of the founders shall forget the wisdom, and cease to practice the self-denying virtues of their fathers. The founders of our institutions clearly perceived that popular government could not rest securely on popular ignorance, and that *knowledge*, and not merely the rudiments of it, generally disseminated among the people, is essential to the stability of that form of government which depends for its existence on the will of the governed. Nor were these views first entertained and expressed by the founders of our Republic. They were among the rich inheritances of civil wisdom derived from the colonial period of our history, as shown, among other proofs, by the celebrated ordinance passed in the year sixteen hundred and forty-seven, by the general court of the Massachusetts Colony, and which is too familiar to need quotation before this well-informed assembly.

This ordinance, it will be remembered, was founded on the assumed right of the State to require that schools shall be supported by public taxation, wherein the youth of the State, whether they be the sons of tax-paying or non-tax-paying parents, may be educated in the higher branches of learning, and fitted to pursue still further their studies in the university.

And it is well-known history, that at a date earlier than that of the ordinance to which reference has just been made, the colonial legislature gave to Harvard University five hundred pounds, which was only the first of a series of benefactions that venerable institution has received from the State, and which, if her necessities require it, and her devotion to the cause of sound learning and civil wisdom render her deserving of the public confidence, should be repeated as new exigencies arise; not, indeed, primarily or ultimately for her special benefit, but that the light of all science, and art, and literature, may be shed abroad over her wide constituency. And this public munificence should not be confined to this, but extended to other similar institutions, so that the latest and best results of study, investigation, and discovery in every department of knowledge shall be brought within the reach of all, and no longer remain the peculiar possession of a few.

In the Constitution of Massachusetts, adopted nearly one hundred years ago, will be found this declaration of principles:—

"Wisdom and knowledge, as well as virtue, diffused generally among the body of the people, being necessary for the preservation of their rights and liberties, and as these depend on spreading the opportunities and advantages of education in the various parts of the country, and among the different orders of the people, it shall be the duty of legislatures and magistrates, in all future periods of this Commonwealth, to cherish the interests of literature and the sciences, and all seminaries of them, especially the university at Cambridge, public schools, and grammar schools in the towns; to encourage private societies and public institutions, rewards and immunities for the promotion of agriculture, arts, sciences, commerce, trades, manufactures, and a natural history of the country."

Substantially the same declaration may be found in the constitution of New Hampshire, and I know not in how many other of the State constitutions. I may have occasion, in a later stage of this discussion, to refer again to these constitutional declarations. I only desire now, in passing, to remind you, that these are not the opinions of an accidental and temporary majority, of a sect or party, but are rather the solemnly expressed and long-cherished principles of a whole people; and also to observe, that the duty on the part of the State to promote the cause of education is placed on the same footing precisely as that of promoting trade, commerce, and manufactures. And when you recall how much has been done by the State and general governments to foster and advance these material interests, you will be furnished with a standard by which to measure the extent to which the State may properly go in the support of its institutions of learning. Indeed, in no other way can the State so certainly promote trade, commerce, manufactures, and agriculture, as by bringing within the reach of those who are to engage in these great industries the means of a liberal education. I do not use the term liberal, in this connection, in any technical or narrow sense. I mean an education which shall not only enable its possessor to perform with skill the manual exercises of his trade or vocation, but which shall also enable him to comprehend and fully understand the laws and principles of that trade or vocation, and all related subjects.

Massachusetts, at the close of the last century and the beginning of the present, made liberal grants of her public lands, situated in what was then the district of Maine, to numerous academies established in nearly every county of the State; and from time to time the State has made grants of money to Harvard, as I have already stated, and also to other colleges in the Commonwealth; and, within the last twenty years, has made repeated appropriations to that department of Harvard University which was created and presided over by the peerless Agassiz. A liberal grant of land by the State was also made to the School of Technology, in this city; and within the last decade a grant of $50,000 from the State treasury was made to the School of Industrial Science, in the city of Worcester,—a school, allow me to say, which, though recently founded, has already sent forth several classes of young men competent to conduct with intelligence and skill almost any of the numerous branches of industry upon which the wealth and material prosperity of the State so largely depend; so that the State—I do not mean the State treasury, but the *State* in a better sense—has received more than an equivalent for its grant of money.

In addition to the evidence contained in the laws and constitutions of the States, from which I have made large extracts, but now pass without reading, to show that it has been the prevailing and settled American doctrine and policy to use the public funds for the support of schools of the higher as well as of the lower grades, the fact may be stated, that from the passage of the celebrated ordinance of 1787 to the present time, Congress has granted and reserved millions of acres of the rich public domain for both classes of schools; and within the last decade and a half has granted many thousand acres to each State in the Union for the special purpose of founding and supporting agricultural colleges. And it is in pursuance of the same policy, and founded on the same right in the State, that laws have been enacted authorizing towns and cities to raise money by taxation for the establishment of public libraries; which is only another mode of providing means for the education of the people, and thus, in the language of the sage of Montpelier, "throwing the light of knowledge over the public mind."

This imperfect review of the colonial and of the federal and state legislation during the entire period of our constitutional history, including, especially, the wise provisions found in the constitutions of most of the States, establishes beyond controversy the fact, that the people of this country have from the beginning believed, and acted upon the belief, that it is both the right and duty of the State to provide funds for the endowment and support of schools of the higher as well as of the lower orders. And this policy has been steadily pursued with the clear understanding, that although the higher institutions thus endowed were open to all, yet that but comparatively few would ever enter their halls or derive direct personal benefit from them. The founders of these States—the far-seeing authors of our early institutions—did not seek to adapt their plans to the narrow wants and necessities merely of their own day and generation: they built for all time, and hoped the republic they were founding would be perpetual; and therefore founded it upon the rock of unchanging principle, and not upon the shifting sands of a temporary and selfish expediency. And what well-informed student of our constitutional and legislative history will now venture to affirm, that the men who laid so securely the foundations of our political institutions, acted under some misapprehension of the rights of the State in their comprehensive provisions for the education of the people? And shall the policy they inaugurated be abandoned as unwise and indefensible, at a time when the boundaries of knowledge are almost indefinitely extended, and the necessity for schools of liberal endowments correspondingly increased? In no age of the world has the truth that "knowledge is power" been so manifest as in the present; and that nation which shall maintain the most advanced system of popular education in the arts and sciences will in the end triumph over all competitors, as has been conspicuously shown within the last few years in the national contests of Europe, both in peace and war. And if New England would maintain its position of power and influence among the States of this ever-expanding Union, it can only be done by maintaining and placing within the reach of all the people institutions of superior education. It is within the memory of living scholars when the declaration that this was an open or debatable question would have been listened to with surprise and an emphatic dissent by every friend of popular education. But indications have not been wanting in certain influential quarters within the last few years of a purpose to overthrow or essentially modify the liberal policy of our fathers in regard to the public provision of means and opportunities for the education of all classes of the people in all departments of useful knowledge. I find some evidence of this purpose in a letter, recently published, from the president of our oldest and, in some respects, most distinguished college, addressed to a professor in a Southern university. The distinguished author of this letter says:—

"I am *not* in favor of supporting schools above the grammar-school grade completely by taxation. I hold that the parents of children who go to high schools should contribute a part of the cost of maintaining such schools. Suppose, for example, that the high school in a city of 40,000 inhabitants costs $30,000 a year, besides the interest upon the city's investment in land, buildings, and equipment for the school, and that there are 500 children in the school, I think it more just and expedient that the parents of each child should pay $40 or $50 a year for their child's great privilege, than that the city should bear the whole charge, provided the city maintain a certain number of free places for the promising children of persons too poor to pay a tuition fee."

. . . .

"Elementary education is of direct and universal benefit, and is not only a legitimate, but the most legitimate public charge. . . . . Diffused elementary education is one of the essential conditions of the formation of that sound national character, upon which the safety of our political institutions does absolutely depend. But the secondary and superior education seem to me to stand upon a different basis. They, too, are *necessary* to the State; but the selected individuals who receive such prolonged training profit so much personally, that they or their parents should pay part of the cost. Let the great majority of parents who can afford it pay a part of the cost of their children's education, and let the meritorious scholars, whose friends are too poor to pay for them, have help from the public purse proportioned to their needs."

This language of the eminent scholar who wrote that letter presents a striking contrast to that of the eminent statesman whose words on the same subject were quoted in the early part of this address, and who was one of the wisest that sat in counsel at the formation of our present federal constitution, and who, after passing through many of the lower but conspicuous grades of the public service, acquiring *practical* knowledge and civil wisdom as he advanced, finally rose to the exalted position of chief magistrate of the nation; and from that vantage-ground of observation declared it was right, equitable, and expedient, that the State should provide for the higher as well as the primary education of the youth of a people who would be free, and at the same time be capable of self-government. Does not the reasoning of our modern scholar proceed upon a too limited view of facts, which must be taken into account before any safe or proper conclusion can be reached? Government touches and affects the governed in a thousand different ways, and its whole scope and purpose must be kept in view if we would judge correctly of any one of its operations.

If we were to regard alone the exercise of power on the part of government, in taxing the whole people for the support of schools, from which comparatively few only of the people will be directly benefited, we should have less difficulty in demonstrating its injustice. But no one would reason thus who is accustomed to contemplate government in action, and to study its manifold and complex operations. There never was, and in the nature of things cannot be, a law authorizing a direct or indirect tax which will operate with equal fairness upon the whole tax-paying portion of the people. There never was any considerable appropriation of public money for a general purpose from which some did not derive more and some less than an equal share of benefit.

To determine whether a law or a policy of government is just or not in its operation, it becomes necessary not only to examine the provisions and operation of the single law in question, but the whole system of which it forms a part must be examined, and its place in and its relation to the whole observed. On what principle, for instance, does the general government maintain a post-office department, at an annual expense of many millions of dollars beyond its receipts, when it is well known that in the New England and Middle and some of the Western States the revenues of the department are more than sufficient to pay the expenses in those States, and that the surplus, with millions more drawn directly from the public treasury, go to support a non-paying mail service in the Southern States, and in other sparsely settled portions of the country. What justice is there in compelling one citizen to pay for transporting the correspondence of another? Why tax one class of States to furnish mail facilities to another class of States? The argument is long, but the conclusion may be briefly stated, that this department of government, which at first view rests upon such apparent injustice, is maintained on the principle that the general welfare is promoted by this uniform and well-regulated system of communication for all the people, and between the different sections of the country; and also because those parts of the country which are taxed to support this department may derive peculiar benefits from the operation of other laws, or in the administration of other departments of government.

Recently, the large award of five millions and a half of dollars was made against our government, and which is to be paid out of the federal treasury, for benefits secured by treaty for a single and limited branch of industry in which only comparatively few of our people ever engage. Why should the industry and resources of the whole country be taxed for that from which so few can ever hope to derive any direct pecuniary benefit? It is because the whole country will derive indirect benefit from the successful prosecution of this industry by a few, just as the whole community cannot fail to be indirectly benefited by the superior education of even a few only of its members.

In like manner, it may be asked, How can the Act of Congress be justified which granted with more than imperial munificence alternate sections of the public lands, amounting to millions of acres, to the Pacific railway corporations, to aid in the construction of their roads? It is not enough to say, that by the construction of this great international work, other portions of the public lands will be brought into an earlier and more profitable market, or that the road will or can be used by the government for military or other governmental purposes.

These gigantic corporations, with their railway reaching from the rising to the setting sun, will derive from these grants of land incalculable and peculiar benefits not participated in by the citizens generally, or by the government; and if this act of the government were alone to be the subject of our inquiry, we should say there had been a most profligate, if not corrupt, waste of public property. But when we raise our contemplation to a broader view of the subject, and see how important to the whole country that the distant portions should be bound together and brought into easy and rapid communication, we easily reconcile the apparent partial evil with the universal good. Again, there is not an act of the general government establishing a lighthouse at any point along our extended seaboard, and whose lights are kept nightly burning at the public expense, to guide the mariner engaged in private enterprises of commerce over the perilous deep to and from his destined harbor, that could not be assailed with equal justice and upon the same ground as the laws for the support of high schools and other institutions of superior education, by equal taxation, or by an appropriation of the public funds.

We have seen that the same articles of the State constitutions which authorize and enjoin upon legislatures the duty of encouraging and promoting trade, commerce, manufactures, and agriculture, also demand that they shall at all times encourage and promote education, and all seminaries thereof.

Under authority derived from one of these constitutional provisions, the Commonwealth of Massachusetts has expended nearly or quite $18,000,000 to build four or five miles of railroad under and through one of the mountains on her western border, which had thrown its huge and obstructive mass directly across the track of trade between the boundless fields of the West and the metropolis of New England. Shall it be said that a State which has the power and can afford to lavish its millions on such a gigantic scheme for promoting trade, may not and cannot, without injustice, raise money by taxation to support high schools, without, at the same time, requiring that those who have wealth shall, in addition to their taxes, pay a further sum of $40 or $50 before their sons and daughters can be admitted to the privileges of the school ; and that the children of the poor, endowed with some genius, can only approach these stately and exclusive temples of knowledge and humbly petition for a free ticket of admission ?

This, as it seems to me, is a wholly un-American doctrine, and at war with the very genius of our institutions, and will never be adopted here until the people are prepared to reverse and repudiate the declaration of principles which lie at the foundation of our system of government; and, moreover, its practical adoption would work an entire change in the character of our high schools, and, in the end, destroy them altogether as a part of the public-school system. Parents contributing their full share towards all the public burdens will never consent to pay, in addition thereto, a discriminating tax before their children can be admitted to the privileges of the *public* schools, and the children of the poor will never consent to enter these institutions upon conditions so humiliating to freemen and equals.

And why, in the language of Madison, should we here, in the realm of knowledge, or in the public provision for the education of all, divide society into classes upon the ever-vanishing line of rich and poor.

The poor, it is said, are always to be with us, but this is a condition of the race. The individuals who are poor, and the individuals who are rich, are constantly changing places.

The primitive rocks are sometimes, by the action of internal forces, thrown up into mountain heights, and from this elevation among the clouds look down upon and dominate all the subject plain; so talent and genius among the poor will, by their own inherent power, force their way up through all the incumbent weight of poverty, obscurity, and neglect into positions of influence and power; and they have, at least, the right to ask that the government, whose affairs in after-years they will come to administer, shall not, in its public schools and at the very start of life, treat them as objects of a degrading charity. The poor son of a poor New Hampshire farmer and the man who sat for many years in the Senate of the United States without an intellectual peer was the same person. And will the lesson never be learned, that rights are not purchased by money alone? The citizen who has served, or is liable to be called on to serve his country in the time of its peril, has earned the right to have his children enter every public institution of learning upon terms of absolute equality. This matter of providing free seats in our public schools for "the meritorious poor" is a wholly different affair from that of providing free scholarships in colleges and universities, as might easily be shown did time permit or the exigence of the argument require it. But I dismiss the topic, in the confident belief that we are not yet quite prepared to forsake the wisdom and example of our fathers, and to found our schools of learning, not upon the permanent and enduring qualities of character and rights, but upon the accidental and ever-shifting distinctions arising from external possessions. And I trust the time is not far distant when the revenues and credit of the State will not be so exclusively directed to the increase of material wealth as a direct object, but that this vast power of public credit may be more liberally used to supply the intellectual wants of the present and succeeding generations.

The line of railway connected with the portion upon which I stated a few moments since the State of Massachusetts had expended so many millions runs, near its termination at the sea, under the classic shades of Harvard; in its middle course it passes within sight of the towers of Amherst; and after emerging from the mountain on its western course, it enters and skirts the beautiful valley where stand the modest but historic halls of Williams. Would it not have been a more judicious expenditure of the public money had a part of the vast amount expended on this one enterprise of opening a new avenue for travel and traffic from the interior to the seaboard been granted to these honored institutions of learning? I am sure it would have done more to exalt the character of the State, and, in the end, would have made more sure and permanent the material prosperity of the people.

The right to make these public grants to promote the intellectual progress of the Commonwealth is beyond question, and if the intelligent friends of education would combine, as do the sons of trade when they have resolved upon an enterprise too great for individual wealth and effort, the light of science would not be so often dimmed, or hidden altogether, even in her chosen seats, for the want of oil in her lamps. The objection that these grants to schools cannot be justified, for the reason that they would not be equally beneficial to all, might with as much propriety be made against other acts; indeed, against the operation of whole departments of government, as has already been shown by examples of the unequal operation of particular laws, and which illustrations could have been indefinitely multiplied. Every righteous human government is like an encompassing providence extending its protection over all and dispensing its blessings with an impartial hand; but those blessings are not the same to all either in character or in the time and manner of their dispensation; as well might men complain of the clouds of heaven because every April shower that happens to fall upon their neighbor's fields does not also send its refreshing rains upon their own, as to charge with injustice every law or policy of government that does not confer equal benefits upon all.

It seems like trifling with a great subject thus to select portions of a majestic whole for special and adverse criticism. Human governments, like the Divine, when comprehensively studied, will be found pervaded by the great law of compensation, and the parts can never be rightly understood except when viewed in their proper relations to the whole. Before finally dismissing this part of the discussion, let me say, what is entirely true, that the public support of high schools and technical schools, wherein the youth of the land may be taught the arts of peace and the duties of civil life, is based on the same principle and justified by the same course of argument, as the governmental support of the two technical schools at West Point and Annapolis, in which a few selected young men are instructed in the art and discipline of war. Every community of men organized under any form of government needs, and must have, individuals educated and competent to administer its civil as well as its military affairs. And this is eminently true under such a government as ours,—"a government of the people, by the people, and for the people,"—where every State, county, city, town, and school district in the land requires educated men to assume important places of trust and responsibility, and to conduct with intelligence the infinitely complicated affairs of such a popular government. And shall it be said, that a government thus needing for its own existence and successful administration educated men, cannot lawfully, and without injustice, provide schools for the necessary education and training of such men. Again, I may remind you of another truth, almost too trite for remark, that every high school, or other school for secondary education, excites a beneficial and elevating influence upon all schools of lower grade in the town or vicinity where it is located. And thus the whole school population are more or less directly benefited. It is time, however, to bring the discussion of this branch of the subject to a close, as I do by observing that there are three principal methods or ways by which the State can directly promote the cause of education.

First. By the endowment and management of schools by the State itself;

Secondly. By grants to schools established by individuals or private corporations; and—

Thirdly. By authorizing and requiring the people to support schools by general and equal taxation.

In some of the States of this Union the first method has been adopted so far as to establish what are called State universities. And why should not every State not now furnished with such a university or its equivalent, maintain within its borders an institution so richly endowed, that the youth of the State might there pursue, with the aid of every appliance and improvement of modern art, science, research, and letters, every useful branch of human knowledge? How has it come to pass that countless millions have been freely expended within recent years, and that, too, in part by the direct aid of the State and federal governments, to develop the material wealth of the State and nation, while many, if not most of our colleges and higher seminaries of learning have been left to struggle on in comparative poverty? This is due, in part, I have no doubt, to the failure of those intrusted with the management of public affairs to discern the real connection between the enduring prosperity and true glory of a people and superior knowledge; but more largely still to a misapprehension of the true grounds on which these public grants to institutions of learning are to be claimed and justified.

It is too late to deny that superior education is *necessary* to the State, and it is precisely on this ground of State necessity that the grants to, and public support of, schools should be made and given, and not on the ground that they are mere benefactions to the grantors.

But whatever may be said or done in relation to State aid to schools of the highest grade, the American people can never safely surrender the principle or practice, that schools must be maintained at the public expense for the education of all youth who will avail themselves of these advantages up to that degree of knowledge and virtue which will enable them to discharge with intelligence and fidelity their duties as citizens of a free and self-governing Republic.

"By the word education," says Horace Mann, "I mean much more than the ability to read, write, and keep common accounts. I comprehend under this noble word, such a training of the body as shall build it up with robustness and vigor, at once protecting it from disease, and enabling it to act formatively upon the crude substances of nature. I mean also to include such a cultivation of the intellect as shall enable it to discern those permanent and mighty laws which pervade all parts of the created universe, whether material or spiritual; and finally, by the term education, I mean such a culture of our moral affections and religious susceptibilities, as in the course of nature and Providence shall lead to a subjection or conformity of all our appetites, propensities, and sentiments to the will of heaven."

And this is the education for which the State should make adequate provision; and there is no other agency by which the great work can be accomplished. The magnificent gifts of Mr. Peabody for promoting popular education in the South, when actually applied to that vast region of ignorance and vice, seems only like the prelusive drops of a promised shower falling upon the arid waste of some mighty desert. The education of a whole people can only be adequately provided for by an annual or periodical taxation of the entire wealth of the country. It never has been done in any other way, and unless all the conditions of social and civil life are changed it never will be. John Adams, as long ago as 1785, in a letter to one of his foreign correspondents, said, writing upon the subject of education: "The whole people must take upon themselves the education of the whole people, and must be willing to bear the expenses of it. There should not be a district of one mile square without a school in it, not founded by a charitable individual, but maintained at the expense of the people themselves. They must be taught to reverence themselves, instead of adoring their servants, their generals, admirals, bishops, and statesmen." These noble sentiments are fit to be inscribed in golden letters over the portals of every school-house in the land, as a standing rebuke and protest against the destructive teachings which would place our schools under the control of sects, or found them upon the infinitely belittling and degrading distinction growing out of the possession of a little more or less of wealth by their immediate patrons.

Our fathers valued institutions of learning, and said they ought to be favorites with every free people, because they throw that light over the public mind which is the best security against crafty and dangerous encroachments on the public liberty, and therefore they did not fail to employ the power, influence, and property of the State to found and support these institutions. Let us build on their foundations, and not attempt to lay others less broad and less permanent.

In closing, I cannot forbear to make a single additional remark upon the glaring inconsistency, not to say folly, of that policy which would expend millions from the public treasury upon military and naval schools, wherein, as has been shown, a limited number only of young men may be instructed in the arts of war, and yet deny to other technical schools, wherein the arts of peaceful industry are taught, all State aid or governmental support. Multiply the latter, fill the land with their light and influence, and you will dispense to a great extent with the necessity of the former. It is knowledge, large and liberal, and not the mere rudiments of it, that is essential to a free government, and to purity and efficiency in its peaceful administration; and we should never forget that the great end and object of secular education is, not to make grammarians and literary critics, but to prepare the young for the sturdy and manly duties of citizenship, and to make them the intelligent and inflexible defenders of rational liberty.

[C.]

THE WORCESTER FREE INSTITUTE.

Opened in 1868.

[A general account of this first successful experiment in combining manual labor with technological training was given in the Appendix to the Fortieth Report of the Board of Education, pages 48 and 348. The following extract from a paper read by Professor Thompson at the Louisville Meeting of the National Educational Association describes the prominent features of what is known as the Worcester Plan for the Technical Education of Mechanics.]

What are Schools of Technology?

They are schools in which the applications of science to the industrial arts are taught. Sometimes schools of industrial art are joined to them; but the tendency of modern thought is to isolate schools of engineering from schools of art.

Engineering is understood to include all those forms of human activity by which matter and force are made subservient to the material welfare of man, through a knowledge of the principles which control the phenomena of matter and of force. The arts of building-construction, mechanics, chemistry, and agriculture, directed by scientific knowledge, are forms of engineering.

The mechanic arts are, of all, most important, and the educational method in these may be taken as representative.

Mechanical engineering must be distinguished from handicraft, since some speak as if the two were identical.

It is easy to see that the ability to produce a true plane surface, or to make a correct pattern with core-box, is something quite distinct from the ability to decide upon the best form and material and the strength of the machinery for a specified work. In fact, one ought to presuppose the other. The craftsman may be very skilful but not be an engineer. The engineer may be very learned and not be a craftsman. When this is their relation, the craftsman often laughs to scorn the engineer's learning, and the engineer under-estimates the craftsman's skill. But if the engineer be first a craftsman,—though not eminently skilful,—he knows how to economize his own learning, as well as that of the unlearned craftsman. The undexterous engineer is liable to dream: the uneducated craftsman to extravagant expenditure of labor.

Schools of Technology a Necessity of Modern Civilization.

The problem of teaching mechanics and artisans, abandoned by manufacturers, must be taken up by educators, since whatever a man can learn the school ought to teach. The apprentice system, of which "do as I do" was the central idea, has vanished before the invasion of machinery. It may be for the employer's interest to teach a boy how to run a machine which produces a part of a boot, a watch, or a lathe; but it is no longer for his interest to teach boys boot-making, watch-making, or lathe-building. Hence it comes to pass that a factory may contain one thousand men engaged in making boots, watches, or lathes, only six of whom can by any possibility make a boot, a watch, or a lathe.

The work of the future is to be more and more done by machinery. All plans for the education of mechanics must bend to this evident fact. For example, such is the perfection of the machinery in one of the largest and most famous manufactories of machinists' tools in this country, that it is found that young men, at ninety cents a day, can turn out as much work, and nearly as good, as journeymen at two dollars a day.

Every improvement in machinery narrows the domain of skilled labor. Yet there is, and there will be always, some—

Demand for Skilled Labor.

The parts of a machine must be finished and fitted, and the patterns and core-boxes must be made. Many pieces of iron must be forged. Die-sinking rather increases in importance. But leaving mere manipulation to those who will fail of the school for any reason, there is work enough for all technical schools that exist or that may be founded in aid of the mechanic arts, to train in the most thorough manner those mechanics who are to invent, to improve, to construct, and to supplement machinery.

The Worcester Free Institute a School of Technology.

The Institute proposes to educate engineers by a path which leads *through* the workshop, rather than around it, and to give all the essentials of an engineer's training in a course of three and a half years for beginners, and three years for those who have had some shop practice. This plan is laid in the belief that a large amount of collateral knowledge—in itself very desirable—must be obtained before entering the school or after leaving it. It is believed that a technical school should do its legitimate work in the most thorough manner. *Pauca fideliter* is the legend of the seal. Legitimate work, thoroughly done, is the source of prosperity in any school. To correct a possible wrong impression, it is necessary to state that its course of study is thorough, and that the graduates of the Worcester School are not expected to confess any inferiority in preparation for engineering to graduates of cognate institutions, and that among candidates for admission are found boys fitted for college and graduates of college.

The cardinal principle adopted at Worcester is that *manipulation* should *mix* with school-work, and that culture, in the special sense, should precede or follow it—the *school-work* being strictly technical or professional.

Conditions of Admission.

Candidates should be sixteen years of age, and thoroughly acquainted with the grammar-school studies, and with algebra as far as quadratic equations.

This is the minimum preparation in which a thorough technical course can take sufficient root. It is hoped that with a better appreciation of the value of this training, a continually improving preparation will be made for it, for technical students derive great advantage from generous collateral culture. The ideal preparative for a school of technology is the same as that for a college.

OUTLINE OF THE COURSE OF STUDY.

Recitations and Practice are assigned to the classes on the following plan, the figures indicating hours per week :—

First Half-year.

Seniors.—Theoretical Mechanics, 5. French or German, 3. English, 2. Chemistry, 4. Physics, 4. Mechanical Drawing, 6. Practice, 10.

Middlers.—General Geometry, 5. Descriptive Geometry, 3. French, 2. English, 1. Physics, 4. Free Drawing, 2. Mechanical Drawing, 6. Practice, 10.

Juniors.—Algebra, 4. Geometry, 4. French, 3. English, 1. Chemistry, 2. Free Drawing, 6.

Second Half-year.

Seniors.—Applied Mechanics, 5. French or German, 3. English, 2. Chemistry, 2. Physics, 2. Mechanical Drawing, 6. Practice, 10.

Middlers.—Calculus, 5. French, 3. English, 1. Chemistry, 4. Free Drawing, 2. Mechanical Drawing, 6. Physics, 4. Practice, 10.

Juniors.—Trigonometry, 4. Algebra, 4. French, 3. English, 1. Chemistry, 4. Free Drawing, 6. Practice, 10.

Apprentices.—English, 5. Free Drawing, 10. Shop Practice, 39.

In each July. Practice, 10 hours daily.

Practice may be in either one of the departments of mechanics, Civil Engineering, Chemistry, Physics, or Drawing; but since mechanical practice alone presents any novel features, no other requires special notice.

PRACTICE IN THE DEPARTMENT OF MECHANICS.

Suppose the student to be a beginner, he enters in February and works seven hours a day till July of the same year in woodworking. For the three following years he works ten hours a week—and in the month of July, ten hours a day—in a carefully analyzed course of iron-work. He graduates early in July, so that the time devoted to practice amounts to 900 hours in the preliminary half-year, and an average of 500 hours a year for the three following years of the course. In this course the student practices chipping, filing, forging, planing, lathe-work, the use of the milling machine, &c., and is exercised in the fitting and finishing of machinery. These parts of his practice must be determined not by *a priori* considerations but by a careful knowledge of the demands which the actual practice of the best shops will make upon him. The capital fact must be constantly in mind that machinery does and is to do the largest part of the shaping of matter into useful forms, and man must be either its servant or its master.

The shop is equipped like any first-rate shop with power, tools, and men. The men, selected for their skill, character, and aptness to teach, serve as instructors to the students when needed for that work. At other times they serve as regular journeymen. When business presses, some men may be employed to serve wholly as journeymen. The shop, therefore, is organized as if for manufacturing, and adapts itself to the school only so far as to modify its plans, so as to give proper variety of work and to receive the students,—an important modification, but not revolutionary. Construction, perfected as far as possible, is made to serve the nobler purpose of instruction.

An important auxiliary to this direct mechanical practice is free-hand drawing. Ten hours a week are given to it for the preliminary half-year—or, as we call it, the apprentice class—six hours a week for Junior year, and two Middle year. The discipline of the sense of form and proportion which is thus acquired is very helpful to mechanics, and increases the efficiency of shop-instruction.

The principles which, it is believed, should govern mechanical practice in technical education are these :—

1st. It should form a constituent part of every week's work throughout the course.

2d. It should be done in the atmosphere of real business but free from the influence of the employer's self-interest.

3d. The student should not expect or receive any pecuniary return for his labor.

First. *Practice should form a part of every week's work.*

This proposition rests on strong grounds.

1. If a boy learns handicraft in his engineering course, he discerns its true relations, step by step, to other parts of this course. The school inspires its intelligence into the work of the shop, and the shop, with eyes open to the improvement of pro-

ductive industries, prevents the monastic dreams and shortness of vision that sometimes paralyze the profound learning of the school. It is always undesirable to put off to adult years the mastery of elementary knowledge. The man does the boy's work by a forced process. He does by compulsion what the boy does freely and of course.

Handicraft finds the same advantage in fellowship that is accorded to other kinds of knowledge. It gains that advantage without intrusion into fields foreign to itself. Patiently and judiciously managed, it is altogether helpful.

2. The parallel study of science and handicraft gives labor its real dignity. This argument, from the moral effect, is a very strong one. Grime is less dreaded than ignorant pretence by a mechanic whose brain and hand have been educated under the same roof.

3. A great economy of time is possible by this arrangement. For practice serves the double purpose of discipline and ot physical exercise. Students of limited pecuniary resources are not unwilling to turn playtime into mechanical practice, when they can, by this means, save time. They make the school-day average 9¾ hours; the week, 5½ days; the year, 42 weeks. The result is, that a three years' course of 126 weeks is found not inferior in any important respect to a four years' course of 128 weeks, which is the division of time in many technological schools. It makes just this difference with a student's expenses whether his course is three years or four, that if the cost is four hundred dollars a year, and the graduate's savings in his first year are one hundred dollars, his fourth year in school costs him five hundred dollars. This sum—$500—expresses the true average difference, then, between the cost of a three years' course and one of four years. A greater economy is the advantage of acquiring a knowledge of handicraft with educated faculties. For it is a form of knowledge.

It is sometimes claimed that intelligence is not an indispensable condition of skill in handicraft. I remember a file-cutter who was pointed out in a shop as a man without a superior in this country in his trade, but so ignorant as to be almost an object of pity. The argument proves too much, though it carries a part of the truth. It is not the object of the school-shop to produce great skill in filing, forging, and planing, but to supply the essential conditions of future skill in any direction which the student may choose to take.

4. Another reason for not making handicraft an appendix to the course is found in the fact that school life for most youth is over at the age of twenty-two. Practically, few would stop to learn the practical use of tools and machinery after leaving school, if they could earn a livelihood by any use of what they had already acquired. Many things admitted to be desirable, and even necessary in a certain sense, are let go. Every experienced educator knows the difficulties that beset his way when he tries to hold young graduates to a course of advanced or expanded study. The number of resident graduates, or of advanced students, in any university catalogue is conclusive though melancholy evidence of the haste of our youth to begin independent living. The argument for a three years' course is based upon the practical necessity of turning the brief period of school life to the utmost account, especially for that large number of boys whose resources will not justify a longer course, however good their intentions and desires.

5. But a much stronger reason for teaching handicraft in connection with the school is, that the period of sharp acquisition lies between the ages of sixteen and twenty-one. The first sixteen years of life ought to be devoted to general culture. Disregarding the exceptional cases of men who have been compelled by circumstances to defer unusually late the desired education, it is true of the greater number of youth, in a regular course of education, that the part of their training which lies just back of their majority is that which gives tone and direction to all their future lives. Whatever mixes with the discipline of those plastic years enters into the life and character of the man in a more intimate and organic sense than the contributions of maturer years. If handicraft follows the school, it must hold a secondary and inferior place—must form an appendix to the main work, and cannot receive the attention its importance deserves. If it is an element of the course of an engineer's training, and not an unimportant accessory, it must enter it on an equal footing with other elements.

It follows that instruction in handicraft must be controlled and directed by the same authority and skill that direct the whole institution. One reason for the failure of all the manual-labor schools which arose between 1830 and 1840, at Oneida, Oberlin, Suffield, East Windsor, and elsewhere, was that the labor was voluntary in every case, and subordinated as an inferior means to a higher end. It was not directed by any pedagogical thought, but was introduced as a method of bread-winning, by which indigent students might be enabled to secure a classical education. A caste was thus created which of itself was a fatal objection. And the students, viewing it as something from which the school enables men to escape as a direful ill, *made* their escape as soon as possible. The work degenerated into play, and the whole system fell into contempt. The handicraft in school was isolated from the student's post-graduate life.

Second. *To make handicraft effective and serviceable, it should be done in the atmosphere of real business, but free from the influence of the employer's self-interest.*

The Worcester shop is a manufacturing establishment, equipped with the best possible tools, and directed by a superintendent who is an educated mechanic. He employs a number of skilled workmen, large enough to carry on the manufactures and to instruct the students. Whatever the shop produces, which is really salable, is sold. The students are, therefore, held to a strict business account from the beginning to the end of their course. It makes a great difference whether a boy is taught to cut an iron screw as an exercise which involves no other consequences than any other lesson learned well or ill, or whether he feels that the screw is to be part of a machine, and that, upon his own care and fidelity, important interests depend. He is in training for the life of a mechanic, and the closer his training lies to the emergencies of that life the better. No element of a mechanic's training is omitted. The course is carefully analyzed. But the novice does his chipping, filing, planing, sawing, milling, etc., under the wholesome tonic of the business consequences of errors. Whatever he proposes to make, he must first exhibit in plan with a calculation of all dimensions, and before he graduates he makes a set of working-drawings of some machine which is manufactured under his eye in the shop. Each student advances in the complexity and difficulty of his work as fast as possible, unhindered by sluggish classmates, and disentangled from all pecuniary interests of the shop in his work. It is true that much students' work is sold. The graduates are able to do good work. But the dominant thought of the school is to make the student as good a workman as possible, without regarding the value of the return he makes in material products. Of course the salaries of all the officers of the shop are independent of its earnings. The facts on the business side of the shop are these :—

The annual salable product is about $17,000. This is sold, and no serious losses have been incurred. The profits on this product fall short, by $3,000, of meeting the actual expenses of the shop. The deficit is charged to the cost of educating the students, and is paid from the income of a fund provided for that purpose. It may be interesting to add, that the shop has never been idle for lack of business, has never carried a cumbrous or entangling amount of unsold products, has never failed to receive first premiums for work exhibited at great competitive fairs, and the deficit between profits on sales and cost of administration is gradually diminishing.

Two objections have been raised against this plan,—

1. It is said that youth, in training for engineers, require a greater variety of work than can be afforded in a single shop devoted to manufactures.

In reply, it may be said that the range of manufactures may be varied so as to afford sufficient variety. Too great variety is a snare, rather than a help. The object of the shop is not to acquaint a student in three years with the literature of mechanism. A mechanical cabinet is the place for that. But the shop does better to give a thorough working knowledge of the fundamental processes of mechanism as found in all manufacturing machine-shops.

This purpose, sharply defined and faithfully carried out, fits into the general structure of the mechanic's training, and goes to produce hands able to execute what the brain suggests.

2. It is also objected, that to regard business restraints in a school is an unworthy motive, and must tend to narrow its scope. There is such a thing as breadth without depth.

So long as all wealth arises from labor, it will be true that all teaching of handicraft which dissociates it from its producing power is misdirected. Other things being equal, that country which commands the most energetic and intelligent labor produces most for a given expenditure of labor. It is therefore desirable that craftsmen should know how to economize labor and give it the utmost efficiency. It savors of affectation to attempt to teach handicraft and not look its relation to value squarely in the face. To spend time in learning mechanical processes which are not used, and in shaping wood and metal merely as a laboratory exercise, does not keep the student in his true relation to the workshop. It adds to his culture, but not much to his practical fitness for a mechanic's life. Excellence in *con*struction, tested by the demands of the best judges, is an indispensable element in sound *in*struction in the mechanic arts.

It is evident that the sort of training recommended for mechanics is only possible in shops established for the express purpose of instruction. The apprentice in a school-shop has the capital advantage of exemption from the restraint of the employer's self-interest. When a man employs others, at wages, he has a right to demand their service in such ways as shall be most serviceable to himself. Apprentices must, of course, do the rough work. Now, from such work the school-shop does not excuse them, but it does not keep them at it any longer than the interests of the students require. So that, with the aid of free-hand drawing, judicious distribution of time, exemption from all mere drudgery, and the immense advantage of learning handicraft with the quickened intelligence which the school imparts, the graduate of the school from a three years' course can and does hold his own, in *mere handicraft*, with the journeymen who have served their three years in a shop.

Third. *The student must not expect any pecuniary return for his work.*

The school-shop is embarrassed by the limited demand for first-rate work in the market, and by the small profit on such work. The presence of the apprentices diminishes its productive capacity; for the shop not only loses what the apprentices destroy in their practice, but what the journeymen might produce who might occupy the students' places, and the instructors might produce were they free from the necessity of teaching the apprentices. The work of the apprentices does not by any means equal the cost of their instruction. It costs more than the amount of the tuition to give the *shop-instruction alone.* In gross it costs $3,000 a year to carry on the shop above the profit on its earnings. Education is its own reward. A student has no more claim upon a school-shop for wages, than a student of Harvard College has upon that institution, where the tuition fee is about one-half the cost of instruction.

On this point of the advantage to the institution of students' work there is a strange misconception. How can the product of a shop, which is filled with apprentices be sold, at a profit, when shops full of skilled workmen can barely live? If, in the movement of modern manufacturing, division of labor is the iron rule, and each man makes but one thing, and even then only the soundest business ability wins success, how is a school-shop to pay its way, when apprentices must be given a variety of work?

In other words, shop management *solely* for the good of a body of students, and shop management *solely* for the profit of it, are, in the nature of things, incompatible. An institution must not hope to succeed in an enterprise which no good business man would undertake. A good school is a harmonious whole. All its parts must be started together, and carried on with equal prominence.

I have thus briefly stated the salient points in the scheme, which has been on trial at Worcester for nine years without any substantial modifications. Its chief interest lies in the fact that it forms part of the modern problem of the rights and relations of labor. Intelligence in labor has in it the cure of all the ills which now attend labor, and the "promise and potency" of every good which may result from its proper adjustment to the nature of capital.

The school is *free* to all citizens of Worcester County, and to twenty-three residents in Massachusetts outside the county. Others pay a tuition fee of one hundred dollars per annum.

Some statistics of the Worcester School are taken from the Centennial catalogue.

STATISTICS OF THE WORCESTER SCHOOL.

The county of Worcester, where the Institute is located, has of the population of the United States, ...	.005	per cent.
Of all inventions made in the United States, ...	.012	"
Of the population of New England, ...	.06	"
Of the inventions of New England, ...	.06	"

Average annual income from funds,	$23,500
from tuition,	1,500
Annual expenditure,	$25,000
Annual expense of shop in excess of profits on manufactures provided for by income from funds,	$3,000

Weeks in school year, including examinations,	42
Total weeks in three years' course,	126
Length of course for mechanics,	3½ years.
for others,	3 "
Per cent. of attendance,	97
Square feet of floor space in the two buildings,	42,934

Number of professors,	8
of tutors,	1
of assistants,	2
of lecturers,	1—12

Total number of graduates,	135
Number of classes graduated,	7
Average number of graduates,	19$\frac{2}{7}$
Average age of graduates,	20.4
Apprentice Class of 1877,	17

NUMBER OF UNDERGRADUATES IN 1876.

Seniors,	27
Middlers,	28
Juniors,	37—92

[D.]

THE MANUAL ELEMENT IN EDUCATION.

There is a growing interest in this subject. The question is, whether we can introduce the manual element into our system of public instruction, in order that a larger number of those whose education, as pupils, ends in the public schools, shall be led more directly than is now the case to some specific pursuit. In this direction, it seems to me, we are to look for the means to elevate and dignify the labor of our country. We must educate, and at the same time make skilful, the laborer. In this way only shall we ever solve this vital problem of the relation between labor and capital, and, at the same time, most effectively develop our great and growing industries.

I wish, first, to offer a few introductory thoughts; second, to consider the method to be followed in teaching the manual element, with such proofs as are at hand of its educational value and efficiency; and lastly, to say something of the way to introduce this element into our system of public instruction.

In the early days of the Republic, when our system of public education was still in its infancy, mental and manual education were much more intimately connected than at the present day. The industries of the country were still in a crude state; agriculture and a few only of the more necessary mechanic trades having any existence. These trades demanded but little artistic taste, and not the highest manual skill. But the educational needs of the time were quite well met in the apprenticeship system, which existed then in its best form. The master became responsible, in an important sense, for the mental and moral well-being of the apprentice, besides teaching him the manual of his trade, with such knowledge of the theory, and such experience, as he was able to impart. By his attendance, for three or four months of each year during his apprenticeship, upon the district school, the mental culture of the apprentice was not entirely discontinued; and thus by alternating between the school and the shop, his mental and manual education were never entirely divorced, but each in an important sense aided the other. During this formative period of the student's life, one set of habits was not formed to the exclusion of others, which in the end might prove more important.

As time passed, a more marked separation between mental and manual education began to take place. The schools gradually improved. Better methods of teaching and a larger number of subjects were introduced, and a higher standard set, all demanding more time from the pupil. But quite as marked a change was going on in the industries. Increased demand led to competition, to the invention of special tools to cheapen production, to a greater subdivision of labor, and to the concentration of the individual upon a very narrow range of work. Thus the apprenticeship system for learning a trade in its old and best form has passed away, never to return. As it exists to-day it is an advantage to neither party. The apprentice can only learn a narrow specialty, so narrow, as a rule, that its only value to him is the meagre pittance which he can earn from day to day, but at the sacrifice of any further educational advantages; while the master finds it for his interest to pay for the skill he needs, rather than put into his carefully adjusted chain of operations a weak and nearly useless link. In this way the school and the shop have become so widely separated, that they are no longer mutual helps, as in past times, in developing the highest capacity or the highest manhood. The student who enters the shop at fifteen for a three or four years' apprenticeship seldom returns to the school; and, on the other hand, the student who completes his High-school course at eighteen seldom willingly enters the shop as an apprentice, with the intention of becoming a skilled mechanic, and earning a livelihood by manual labor. His twelve or fourteen years of mental school-work, whether highly successful or not, have, through habit, if in no other way, unfitted him for all manual work, even if he has not in many ways been taught to despise such labor. Thus it happens, that to-day, educators, law-makers, philanthropists, and all interested in the highest good of the largest number of the people, or in the best development of our growing and varied industries, are looking for the remedy through education, not of the head alone, but of the head and hand combined in the same system, in order that the education may lead each pupil to some definite end, or directly to the threshold of some special pursuit; that the student's skill of head and hand combined shall have some small commercial value when he has completed his prescribed course of study.

There is a growing feeling that our public education should touch practical life in a larger number of points; that it should better fit all for that sphere in life in which they are destined to find their highest happiness and well-being. It is not meant by this that our education should be lowered mentally, but that it should be based, if possible, upon those elements which may serve the double purpose of a mental culture and discipline,—a development of the capacity of the individual with and through the acquisition of artistic taste and manual skill in the graphic and mechanic arts which most largely apply in our industries. It is true that our system of public education aims to prepare those who wish it for further literary and professional study; but for the large proportion of pupils, the Grammar and High Schools are finishing schools; and it would seem not only proper, but just, that they should be adapted to the wants of the largest number. If this is to be done through the introduction of a larger manual element, a few questions at once arise.

1. On what ground can we justify the introduction of the manual element into our system of public education?

Solely on the broad ground of its educational value to all. It is only on this ground that we can justify the introduction of drawing, either free-hand or mechanical, into our Public Schools. It is plain, that if all were taught drawing, not more than one in a hundred, if so many, would ever practice the art as a livelihood, while the ninety and nine would be compelled to pursue a study of no value to them, if it cannot be so taught as to be justified on purely educational grounds. The advocates for the introduction of drawing must then show that the subject is either intrinsically educational or can be made so by the method of teaching it, of which it seems to me there can be no doubt. To-day, in all the best technical schools, both at home and abroad, the art of drawing is required of all, whether the pupil's chosen course demands its special application or not. It is, besides, slowly gaining a place in our Public Schools; but the product must be something more than a little manual skill to justify it. The manual element, either in the graphic or mechanic arts, must be taught by such methods as will cultivate the other powers through the acquisition of manual skill.

2. Have we found a method of teaching the mechanic arts, both theoretically and practically, similar to those used in teaching the sciences and other purely mental subjects? To answer the question as best I can is the main purpose of this paper. Before asking attention to any special shop courses, and to the educational method which they exhibit, it will be well to briefly point out what is meant by the Russian method of instruction in the mechanic arts, and in what way it differs from the trade schools which have existed for so many years, especially in France and Germany. It is not meant that Russia was the first to introduce the manual element in education, as some have supposed. The Imperial Technical School of Moscow was the first to show that it is best to teach an art before attempting to apply it; that the mechanic arts can be taught to classes through a graded series of examples by the usual laboratory methods which we employ in teaching the sciences. After these arts have been learned, both theoretically and practically, the student is sent into the construction shops to apply his art knowledge. Making the art and not the trade fundamental, and then teaching the art by purely educational methods, is the Russian system. The system is instruction in the arts for the purpose of construction, and not construction for the purpose of instruction. The method is not only educational, but it constitutes the only true and philosophical key to all industrial education. If we can formulate into an educational method the arts which apply in any particular industry, we have only to group about these art-courses such other subjects of study as obviously pertain to this industry, to have a scheme which shall most surely and directly fit the student, both in theory and practice, to enter upon its pursuit.

It may be well to further illustrate this fundamental idea by a somewhat different line of thought, as, to many who have not had their attention called to the subject, the distinction between an art and a trade may not be at once apparent.

"Every one is well aware that the successful study of any art, as free-hand and linear drawing, or music, instrumental or vocal, or painting, is only attainable when the first steps are strictly subject to the laws of gradation and succession; when the student adheres to a definite method, thus surmounting, little by little, and by certain degrees, the difficulties to be encountered. All the arts just named possess a method of study which has been well worked out and defined, since they have long constituted a part of the education of the well-instructed classes. They have therefore become subject to scientific analysis and objects of investigation, with the view of defining those conditions which should render the study of them as easy and well regulated as possible."

Let us see, now, how these thoughts apply to the mechanic arts, and, for definiteness, let us fix our minds upon those arts which apply to wood and the metals.

In all constructions a certain limited number of typical forms are found, these forms being more or less modified, to adapt them to special cases. These forms will also fall into groups, each to be worked out in a certain way, and with special tools. If, then, the student can be taught to work out these forms, each in the best way, and with the tools best adapted to the work, he will be far advanced in the skill which will make him available and useful in construction. The ideas involved in the system are, first, to entirely separate the *art* from the *trade*, the *instruction*-shops from the *construction*-shops; second, to do each kind of work in its own shop; third, to equip each shop with as many places and sets of tools, and thus accommodate as many pupils, as a teacher can instruct at the same time; and fourth, to graduate the samples to be made in each shop according to some scale, that of difficulty being probably the best in practice.

It will be seen, then, that the problem thus far is simply one of systematic instruction, given by an expert in each shop, and having the same end in view as instruction in any other subject or department. The aim is to give sufficient skill in each specialty in the shortest possible time, and to give the instruction to as many at the same time as the teacher can well instruct, thus securing the greatest economy of time, and therefore money, to both teacher and pupil.

The solution of the problem has been approached from the instruction side, and not from the construction side, and in this consists its fundamental and thoroughly practical character, as part of a system of education. The system presupposes the student's ignorance, and begins at the foundation, both in theory and practice. Every step well taken from such a beginning is a clear gain, and the successive steps have only to be taken to arrive at the goal of success.

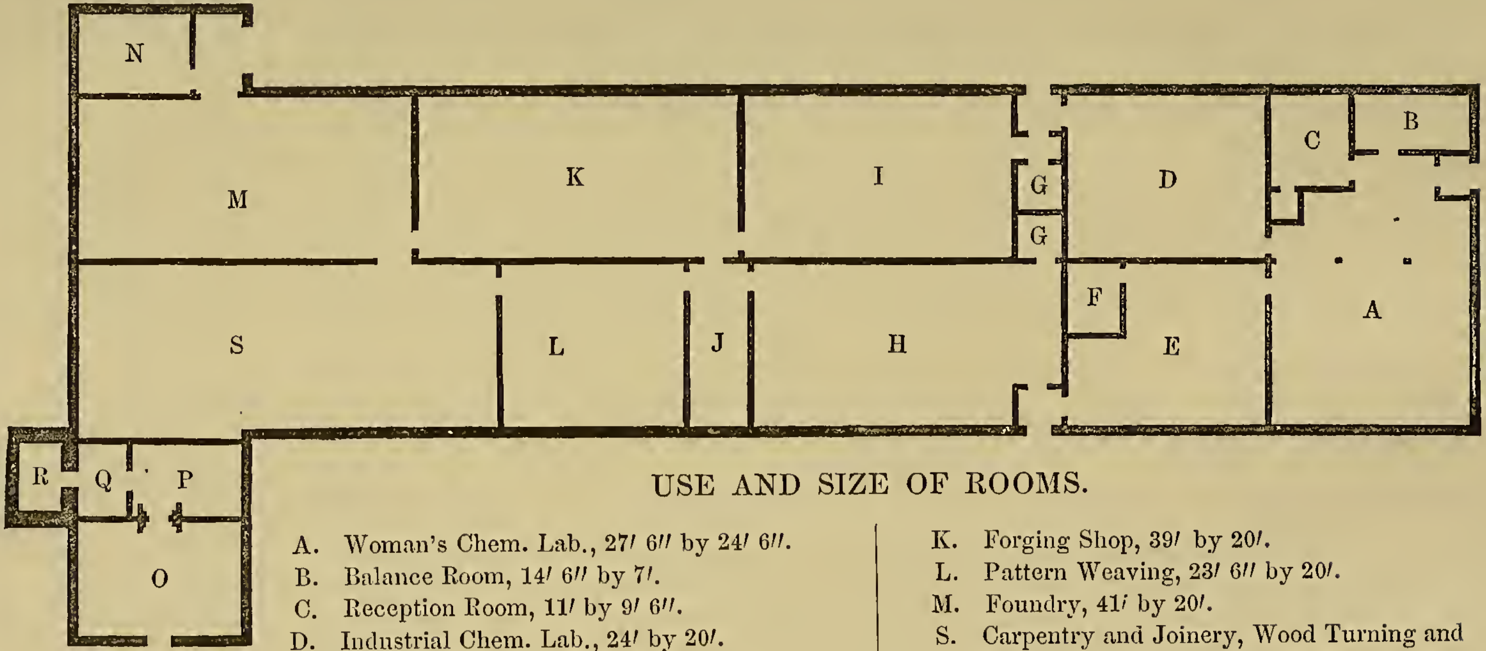
Another value of the system is, that it is equally well adapted to the wants of each class, or grade, of students. If one wishes to be a mechanical engineer, and finds that he has the ability to master the highest theoretical questions involved, the amount of shop-work will be graded to meet his needs; if, on the other hand, the student looks forward to the rank of a first-class machinist, he will need more mechanical dexterity, and will therefore work out a larger number of examples, and be required to do less in the higher mathematical and theoretical studies.

It is also an exceedingly important feature of this system, that the instruction-shops are the least expensive to equip and maintain; and further, it is not necessary for the highest success of this instruction, that construction-shops should also be immediately connected with the school, either as at St. Petersburg or at Moscow. In this country the young engineer, or machinist, after graduating in such a course, will find no difficulty in completing his practical education in great manufacturing works, and probably under circumstances quite agreeable to those who have already spent all they could borrow to complete their chosen course of study. Further, the system applies equally to all industrial arts needing manual skill.

In each case the details must be worked out simply as an educational problem, and the instruction put in charge of an expert specialist, who understands theoretically and practically the particular manipulation. With the same skill, energy, and perseverance as are needed to command success in the teaching of any subject, we shall not fail of corresponding success in the teaching of practical industrial art. With the ability to make will come the desire to create, to those who have the capacity to rise into the higher realms of their chosen art.

Next, let us see how these ideas have been carried out in practice. In our new "School of Mechanic Arts," at the Insti-

NEW TEMPORARY BUILDING FOR SHOP-WORK AND CHEMISTRY.



USE AND SIZE OF ROOMS.

A.	Woman's Chem. Lab., 27′ 6″ by 24′ 6″.
B.	Balance Room, 14′ 6″ by 7′.
C.	Reception Room, 11′ by 9′ 6″.
D.	Industrial Chem. Lab., 24′ by 20′.
E.	Microscopical Lab., 24′ by 20′.
F.	Dark Room, Spectroscope.
G.G.	Tool and Stock Rooms, 6′ by 6′.
H.	Machine Tool Shop, 37′ by 20′.
I.	Chipping and Filing Shop, 32′ 6″ by 20′.
J.	Engine Room, 20′ by 7′ 9″.
K.	Forging Shop, 39′ by 20′.
L.	Pattern Weaving, 23′ 6″ by 20′.
M.	Foundry, 41′ by 20′.
S.	Carpentry and Joinery, Wood Turning and Pattern Making, 50′ by 20′.
N.	Wash Room, 13′ 6″ by 9′ 6″.
O.	Organic Chem. Lab., 19′ by 14′.
P.	Special Work Room, 13′ by 9′ 6″.
Q.	Store Room, 9′ 6″ by 6′.
R.	Ice Chamber, 8′ by 5′.

tute of Technology, the art courses are as follows: In *wood*—I. Carpentry and joinery; II. Wood-turning; III. Pattern-making. In *iron*—I. Vise-work; II. Forging; III. Foundry-work; IV. Machine-tool work. In *textiles*—I. Designing; II. Pattern-weaving; III. Dyeing.

While these shops are used for the practical instruction of our students in mechanical engineering, and for such other professional students of the Institute as desire it, they are most largely used by students in the school of mechanic arts. This school, in which special prominence is given to *manual* education, has been established for those who wish to enter upon industrial pursuits, rather than to become scientific engineers. It is designed to afford such students as have completed the ordinary Grammar-school course, an opportunity to continue the elementary scientific and literary studies, together with mechanical and free-hand drawing, while receiving theoretical and practical instruction in these various arts, including the nature and economic value of the materials with which they deal. Twelve hours per week—three lessons of four hours each—of the students' time are devoted to shop-work, and the balance to drawing and other studies; only one shop course, except in the case of special shop students, being carried on at a time. The shop samples to which I shall particularly call attention are those in vise-work and forging, These are the courses we have studied most carefully, and in which we have the largest educational experience.

It may be well, now, briefly to indicate the steps necessary to be taken in fitting up a shop, and in working out the course of study.

The Shop. 1. Settle upon the tools and appliances to be used during the course. 2. Decide how many students can be taught in a section. 3. Design the fitting up of the shop, giving each student the proper space and facilities, and so arrange that each student, in each section, can lock up and control his own tools and instruments, which are not to be used in common.

The Course of Study. 1. Design a series of progressive lessons, especially adapted to teach the use of the set of tools and appliances selected. 2. Let the master work each lesson, or sample, in advance of the class, in order, first, to decide the time it will take him to work it, that he may be able to assign the proper time to the class; and second, that he may settle clearly in his own mind the best method of solution, with a statement of the reasons therefor. 3. A system of inspection upon which the quality of the work can be based, and each student given his proper percentage, and which shall also be the means of educating the judgment of the student, that it may keep pace with his skill of hand to execute.

We find, then, that in this practical part of the problem, there are three distinct educational steps. First. The best method of solution. Second. Skill of hand to execute the work. Third. The capacity to judge of the quality of the work.

Let us now briefly examine some applications.

The following report of an Industrial School, conducted by an Industrial School Association of Boston in 1876–77, is so simple and so excellent an example of the Russian method of mechanic art-education, that I copy it, as the best introduction to our Institute courses. The aim was to teach a class of boys the use of the chisel and gouge in wood-engraving. The method pursued was the same as that which had been previously worked out in the vise course at the Institute of Technology by Prof. Whitaker and Mr. Valentine Wallburg.

REPORT OF INDUSTRIAL SCHOOL.*

For the Season 1876–7.

In the winter of 1876–7, the "Whittling School," which had been carried on for five seasons in the Chapel of Hollis-street Church, united with the Industrial School, conducted for two seasons in the Lincoln Building, and formed the school described in the following report. The friends and supporters of both schools, and others interested in the cause of industrial training, formed an association called the "Industrial Education Society," and this association has developed and maintained the school.

Mr. Frank Rowell, of the firm of Allen & Rowell, photographers, has been the Superintendent of the "Whittling School" from its beginning, and he generously consented to take charge of this school, without other remuneration than the satisfaction he would take in its success. Messrs. J. H. Fifield and Charles B. Cox, practical wood-carvers, were employed to prepare the lessons and give the instruction. Prof. Whitaker, of the Institute of Technology, gave much valuable assistance in the formation of our plan, and to these gentlemen we are chiefly indebted for its success.

---

* This report is printed, because we believe that it illustrates *the method* to be pursued in Industrial Education. This method being understood, it can easily be used with other tools and other lessons.—G. L. C.

The city gave us the use of the ward-room on Church Street, and there, on the evenings of Tuesday and Friday of each week, from seven to nine o'clock, the school has been held.

This room had to be prepared for its new uses. Firm work-benches were set up, giving each boy a space for his work four feet in length and two and a half feet in width. Each bench had a vise with common wooden jaws and an iron screw, a drawer with lock and key, in which the tools were kept, and a gas-burner with movable arm. Each boy was provided with a large work-apron of cotton drilling. All the benches, tools, and aprons were numbered, and each boy was made accountable for their care and keeping.

Printed rules of the school were pasted on each bench, and every precaution taken to secure good discipline.

Bench Regulations.

1. Be at bench at seven o'clock, according to your number.
2. Do not leave your bench without permission.
3. Give *all your attention* to your own work. Do not notice anything that others are doing, unless requested to do so.
4. Make no unnecessary noise, such as whistling, etc.
5. Keep your bench neat, and do not deface it in any way.
6. After work place all your tools and other equipments in your drawer, according to your number, and return the key to teacher.
7. Every boy will be held accountable for the tools placed at his bench for his use, according to his number.

Thirty-two boys were admitted to the school. Their ages ranged from twelve to sixteen. About half of them were still attending the day-school; the others were employed in stores or offices. They came from the Sunday schools of the Hollis-street Church and the First Church, and from the Lincoln Building. Perhaps twelve of them had received some instruction in the use of the jig-saw and knife, but none of them had had any previous training in wood-carving or the use of the chisel. There were more applicants for admission to the school than we could receive. If any boy was absent two successive evenings, his place was taken by another. A rank-list was kept and pasted on the wall, and each boy knew how his work was estimated by consulting the list. A course of twenty-four lessons in wood-carving was prepared, with special reference to securing the greatest amount of instruction with the least expenditure for tools and material. It was not designed to make finished workmen in wood-carving, but to take advantage of the natural inclination towards handicraft,—the Yankee taste for whittling which belongs to most boys, and to develop it and guide it to useful applications.

The tools used in the following lessons were the flat chisel, the gouge, and the veining-tool or small gouge. Smooth blocks of whitewood, six inches long by two or three inches broad and one and a half inches thick, were the material worked upon.

1. The first lesson aimed to teach the boys to cut a concave chamfer around the block, keeping carefully within the lines drawn parallel with

the edge of the block, and making the mitres perfect. They were also taught to keep the dip of the gouge even throughout.

2. The second block had eight corners instead of four, as in the first lesson, and the same manipulations were continued.
3. The third block had curved corners.
4. The fourth lesson introduced flat chamfers, with vein-lines cutting across the block.
5. In lesson fifth the vein-lines of block No. 4 were stopped before coming to the edge.
6. The sixth lesson introduced a pattern or ornamental figure for veining.
7. No. 7 taught the boys to make perfect corners with vein-lines.
8. The shape of block was changed and a new pattern for veining given.
9. This lesson taught how to make round ends to flutings.
10. Finishing mitre-ends of chamfer.
11. Fluting, with especial care in keeping dip of gouge even and making the mitres perfect.
12. Carving diamond-points all around the block, and fluting.
13. Making perfect projections around the block.

14.
15. } Fluting and finishing the end of flute.

16. Same as No. 15, with change in shape of block.
17. Making scroll-corners.

18.
19. } Same as No. 17, with change in pattern.

20.
21. } Same as No. 19, with new pattern.

22. Cut corner-chamfer, and flute.
23. Same as No. 22, with new pattern.
24. Make perfect mitres, with sharp points at mitres.

In one of these lessons cherry was substituted for whitewood, but it was too hard for the younger boys. It will be noticed that no specific article was made in the school. The variety of manipulations and change of patterns were enough to maintain the freshness of the scholars' interest, without introducing the manufacture of any article of trade or commerce.

The object of the school was not to educate cabinet-makers or artisans of any special name, but to give the boys an acquaintance with certain manipulations which would be equally useful in many different trades. *Instruction*, not *construction*, was the purpose of this school. After the blocks were finished they were placed in a rack on one side of the room, and each boys' progress could be seen by consulting those specimens of his work.

The blocks were prepared by the teachers before the school opened. If another term of instruction could have been given, the boys would have been taught to prepare the blocks themselves.

Those of them who have been trained in industrial drawing in our Common Schools would be perfectly competent to make their own patterns. As an illustration of this, one of the teachers said that he took some of the patterns from the drawing-book of his own child, who was a scholar in one of our Public Schools.

Does not this incident show the natural sequence of such a course of hand-culture as we have been describing, upon the education in drawing now prevalent in our Common Schools? One such work-school as we have described might furnish four hours' instruction every week for one hundred and ninety-two boys; or, if evenings were added, for two hundred and eighty-eight boys. This is more than the number of pupils between the ages of thirteen and sixteen commonly found in any one Grammar School. We cannot but believe that it would be easy to establish, in connection with all our Grammar schools for boys, an annex for elementary instruction in the use of the half-dozen universal tools; *i. e.*, the hammer, saw, plane, chisel, file, and square. Three or four hours a week, for one year only, of the Grammar-school course, would be enough to give the boys that intimacy with tools, and that encouragement to the inborn inclination to handicraft, and that guidance in its use, for want of which so many young men now drift into overcrowded and uncongenial occupations, or lapse into idleness or vice.

GEO. L. CHANEY,
FRANK ROWELL,
ABRAHAM FIRTH,
Committee on Report.

THE COURSE IN VISE-WORK.

In approaching the mechanic-art problem, we settled upon vise-work as the first course to be established; and I wish here to express my great indebtedness to Professor Whitaker, whose practical experience enabled him to judge of the value of the system, and to superintend the working out of the details of the instruction and supervision, which have been so ably and satisfactorily carried out by Mr. Valentine Wallburg, who has had the immediate charge of this shop course. The shop contains four heavy benches, each eighteen feet long, three feet wide, and two and one-half feet high. To each bench eight vises are attached. It was supposed that one teacher could instruct thirty-two students at a time, and this has been found to be about the right number. At the beginning of the course it is quite enough; but later, when students have acquired some skill and independence, this number can be successfully taught. At each vise there are four drawers, each large enough to hold all the tools needed by the student at any one time; so that four sections, of thirty-two each, can take the course simultaneously. This shop has then a capacity for teaching the course to one hundred and twenty-eight students every ten weeks, and to six hundred and forty in a year of fifty weeks.

Vise-work applies in the following trades :—

Blacksmith,
Gunsmith,
Die-sinker,
Locksmith,
Brass finisher,
Philosophical-instrum't maker,
Engineering-instrum't maker,
Tool-maker,
Iron-mould maker,
Machinist,
Tinsmith,
Jeweller,
Nautical-instrument maker,
Musical-instrument maker,
and many others.

Vise-work divides into—

Filing,
Scraping,
Reaming,
Brazing,
Chipping,
Breast-drilling,
Thread-cutting,
Burnishing,
Sawing,
Tapping,
Soldering,
Stoning,
Bluing, etc.

The first course in vise-work, which includes filing, chipping, and sawing, consists of thirty lessons, of four hours each, three lessons per week. Plates I., II., III., IV., course in vise-work, show the series of designs as they come to, and are worked out by, the student.

I. Filing to line. All cast-iron.
II. Template work. Sawing and filing.
III. Free-hand filing. Bench vise. Cast-iron.
IV. Fitting. Cast-iron and steel.
V. Chipping. Cast and wrought iron.
VI. Chipping and sawing. Cast and wrought iron.
VII. Chipping. Half-round chisel and spline-work.
VIII. Free-hand filing with hand-vise. Steel wire.

Tools used in the course—Plate V—one set :—

No. 1. 10-inch hand bastard file. American.
2. 10-inch hand 2d-cut file. "
3. 8-inch hand smooth file. "
4. 7-inch hand superfine file. English.
5. 6-inch pillar bastard file. Swiss.
6. 6-inch pillar superfine file. "
7. 6-inch pillar superfine file. English.

No. 8. 5-inch half-round smooth file. American.
9. 6-inch half-round bastard file. "
10. 6-inch half-round superfine file. Swiss.
11. 9-inch half-round 2d-cut file. American.
12. 10-inch half-round bastard file. "
13. 4-inch three-cornered file. "
14. 6-inch round bastard file. "
15. 6-inch square 2d-cut file. "
16. 9-inch round bastard file. "
17. 9-inch square 2d-cut file. "
18. Hack saw. English.
19. File card. American.
20. 4½-inch try-square. American.
21. 1½-inch try-square. "
22. 4½-inch hand-vise. German.
23. 4½-inch spring calipers. English.
24. ⅞-inch flat cold-chisel.
25. ⅞-inch half-round cold-chisel.
26. ⅜-inch half-round cold-chisel.
27. ¼-inch cape cold-chisel.
28. ½-inch cape cold-chisel.
29. ½-inch flat cold-chisel.

We have already stated that there are three distinct educational steps to be kept in view—

First. The best method of solution.
Second. Skill of hand to execute the work.
Third. The capacity to judge of the quality of the work.

I will now call attention to the report of Mr. Wallburg upon the system of inspection. As this method of inspection is an important element in the system, not only for determining the progress of each student, but especially for cultivating his powers of observation and judgment, and is applied in the other courses, I include the report in full as an instructive educational paper.

Boston, November 18, 1877.

Prof. C. Whitaker.

My Dear Sir:—I herewith transmit, to be forwarded to President Runkle, an explanation of the analysis of the different pieces which each student in the course of instruction in vise-work produces during the exercises in filing.

These pieces, and the system by which their inspection has been conducted, were designed by me to conform with general instructions given by you. The apportioning of a part of the percentage of rank to each separate detail to be inspected was my suggestion, and the classification of the pieces and lessons was your work. I believe most strenuously in giving the pupil the credit of performing even the smallest detail correctly; or, in other words, if there is a general result to be obtained, and the student has failed to reach it satisfactorily, if some minor point tending toward it be accomplished correctly, to give full credit for the part done right, as if the whole result had been obtained.

With the object in view to do justice to the pupil, to secure an impartial standard which shall be a guide both to instructor and pupil, and to have each piece graduated according to the difficulty of the work, or the experience of the pupil, I have originated the following plan of inspection for the different pieces.

PIECE NO. 1 (CAST-IRON); TIME FOR SOLUTION, FOUR HOURS.

Analysis on which inspection is based.

Point No. 1.	Filed to line on one side, ...	20 per cent.
2.	Filed to line on other side, ...	20 "
3.	Filed straight lengthwise, ...	20 "
4.	Filed straight crosswise, ...	20 "
5.	No cross-marks, ...	20 "
		100 "

Tools used: 10″ hand bastard, 10″ hand second cut, 8″ hand smooth, 4½″ try-square.

The whole course is based upon the different manipulations of the common-shaped files and cold-chisels. Piece No. 1 is designed to teach the use of the three larger coarse flat files only, as they follow each other in obtaining a plane surface; and at the same time to observe the same care and degree of accuracy as though, when finished, the piece were to become part of a machine.

This principle is true of all succeeding pieces, and with this piece the pupil is at once made familiar with the strictness with which the work will be examined, and sees that *head*-work is as essential in getting the required result as *hand*-work.

Point No. 1 gives the pupil credit for twenty per cent., if he has removed the surface *just* to the line on one side of the piece. Point 2, twenty per cent. more, if the same be true of the opposite side; if he has filed below the line, or not quite to it, that proportion of the work not done right is deducted from the whole. Point 3 requires the piece to be straight lengthwise, for which twenty per cent. is credited; and Point 4, that it be straight crosswise, with twenty per cent. credited; and Point 5 gives twenty per cent., if all cross-marks made by the two coarse files have been removed in draw-filing.

It will be seen by the above that each point is considered of equal value, and that no point can be slighted or sacrificed without bringing the rank of the whole piece down in proportion.

PIECE NO. 2 (CAST-IRON); TIME FOR SOLUTION, SEVEN HOURS.

Point No. 1.	Straight lengthwise,	40	per cent.
2.	" sidewise,	40	"
3.	All angles equal,	12	"
4.	No cross-marks,	8	"
		100	"

The tools used are the same as in Piece No. 1.

In Piece No. 1 the pupil commenced filing on a broad and flat surface. It was, therefore, easy to get a bearing for the file, and the file-marks extending across the piece from side to side gave instant evidence if the pupil was filing on either side more than the other. On Piece No. 2 he has no surface to get a bearing on until he shall create one, and, therefore, this piece is designed to give practice in firmly carrying the file across a thin edge, giving the knowledge necessary to enable the pupil to realize the importance and the difficulty in keeping a narrow edge straight, and still not getting below the lines, which would involve a new difficulty, for all sides of this piece must make equal angles with each other when completed.

As this piece, when handed to the pupil, is a square bar of cast-iron, with all of its sides planed, it will be seen that four sides were plane when taken; but the pupil is required to draw-file all sides, and to have them meet in equal angles; and as the corners to be filed to are all lined as a safeguard, the pupil deserves equal credit in having each of the eight sides true planes when finished; and as in Piece 1, only one plane surface is produced with a credit of twenty per cent. for straight length, and twenty per cent. more for straight breadth, making forty per cent. for one plane surface, we give for the same relative points in this only ten per cent. for each plane, or eighty per cent. for the eight planes taken together. If the pupil is careless in getting the piece rounding on any one side, his rank is further reduced by the inspection of Point 3, which deducts twelve per cent., or a proportionate part of twelve per cent., as the case may be. As the pupil has had experience in draw-filing on Piece 1, and as the smooth file is wholly used in finishing and evening up the piece, we give credit for only eight per cent. on Point 4. In the corresponding point in Piece No. 1 we give twenty.

PIECE NO. 3 (CAST-IRON); TIME FOR SOLUTION, FOUR HOURS.

Point No. 1.	Whole line,	30	per cent.
2.	Straight lengthwise,	20	"
3.	" sidewise,	20	"
4.	Point square, with lined side,	5	"
5.	No cross-marks,	10	"
6.	Square on back,	15	"
		100	"

Tools used: same as in Nos. 1 and 2, with the addition of a 1½-inch try-square.

Pieces numbered one and two had lines on both edges of each surface to be filed. In Piece No. 3 the pupil is to file two narrow surfaces perfectly plane, with only one line of each surface as a guide, his experience especially in Piece No. 2 being thought sufficient to accomplish this result. He is also to take his first lesson in rounding an irregular or rough point; but still keeping the principle of accuracy in view, it is rounded to the guide curve on one side. The edge opposite to the lined edge is required to be its duplicate.

In Point No. 1 the pupil is required to file just down to the line, and still leave the edge of the piece straight lengthwise and sidewise without going below the line, as this result could be obtained easily with the pupil's previous practice, were it lined on both sides. I give him thirty per cent. credit for doing so with a line only on one side, where I gave him forty per cent. on Piece No. 1, for doing the same thing on a broader surface, with lines on both sides.

In Point No. 2 the pupil gets credit for twenty per cent. if the edge is perfectly straight, for the reason that if he should file the edge hollowing, he might conform to the other requirements, and still not do a perfect piece of work.

In Point 3 the pupil gets credit for twenty per cent. in keeping the side not lined perfectly straight and square with the lined side. Point 4 gives five per cent. for rounding the point on the piece properly, and keeping square to the lined side; and just down to line; therefore, Points Nos. 1, 2, 3, and 4 aggregate seventy-five per cent. for the faithful performance of the new requirement.

Point 5 gives ten per cent. for no cross-marks. This is to induce the pupil to put a finish on his work, as, without finish, any filed work looks incomplete.

Point 6 requires the piece to be square on the back; *i. e.*, the side opposite the lined side.

PIECE NO. 4 (CAST-IRON); TIME FOR SOLUTION, FIVE HOURS.

Point No. 1.	Line on two sides of square hole,	10	per cent.
2.	Line on four sides of square hole,	15	"
3.	Good corners,	15	"
4.	Square two sides,	10	"
5.	Square four sides,	20	"
6.	No cross-marks,	10	"
7.	Straight sidewise,	10	"
8.	Straight lengthwise,	10	"
		100	"

Tools used: 10″ hand bastard; 10″ hand second cut; 8″ hand smooth; 8″ square second cut; 6″ pillar bastard; 6″ pillar super. files; 4½″ and 1½″ try-squares.

This piece is designed to teach the use of two kinds of files in addition to those already used by the pupil, and, at the same time, to show how to get the outside edges square with each other without the aid of lines, using lines only where the new files are needed. The pupil is also taught, for the first time, how to file interior plane surfaces, meeting in square corners.

One side of the piece is draw-filed in finishing it, thus removing the lines marking the boundary of the square hole on that side. The instructor should examine every piece after it is completed in every respect, except draw-filing that side, and mark the side which is not to be draw-filed, thereby preventing the pupil from draw-filing the side whose lines have been filed away in squaring the hole, so that the finished side is always the more perfect side. If neither side is satisfactory in this respect, neither side should be draw-filed.

Point 1 (ten per cent.) requires that two sides of the square hole shall be filed just to the line.

Point 2 (fifteen per cent.) requires that all four sides of the hole shall be correctly filed to line, for the pupil deserves more than twice the credit for having got all four sides right, than two sides which may or may not be adjacent.

Point 3 (fifteen per cent.) requires that the inside should be straight across. As the pupil is furnished with a small try-square to test this, and as he has had similar but less difficult practice in the last piece, on the outside of the piece, I have deemed it unnecessary to make an extra point, but take the whole under the head of Good Corners, and the more especially as the pillar files used are nearly as wide as the sides of the square hole, thereby rendering it almost impossible to make good corners without leaving the hole straight inside.

Point 4 (ten per cent.) requires that the end and one edge be square with each other.

Point 5 (twenty per cent.) requires that all four edges be square with each other on the outside.

Point 6 (ten per cent.) requires that there shall be no cross-marks.

Point 7 (ten per cent.) requires that the outside edges shall be straight lengthwise.

Point 8 (ten per cent.) requires that those edges shall be straight sidewise.

It will be remembered that on Piece No. 3 the pupil got forty per cent. for the corresponding manipulation.

PIECE NO. 5 (CAST-IRON); TIME OF SOLUTION, FOUR HOURS.

Point No. 1.	Line on one side, ...	12	per cent.
2.	Line on other side, ...	12	"
3.	No grooves, ...	10	"
4.	Straight inside, ...	10	"
5.	Square two edges, ...	10	"
6.	Square four edges, ...	20	"
7.	No cross-marks, ...	6	"
8.	Straight crosswise, ...	10	"
9.	Straight lengthwise, ...	10	"
		100	"

Tools used: 10″ hand bastard; 10″ hand second cut; 8″ hand smooth; 9″ round file; 6″ round file, and $4\frac{1}{2}$ try-square.

This piece is particularly designed to teach the manipulation peculiar to the round file, thus preparing the pupil for the piece that follows, and, at the same time, continuing the practice with the larger files used on Pieces Nos. 1, 2, 3, and 4.

Points 1 and 2 (twelve per cent.). The line is to remain as in former pieces. The oval is quite narrow at either end, and it is difficult for the pupil, with the new tool (the round file), and the entirely new manipulation, to conform to this point; and, therefore, I give twelve per cent. for each side (Points 1 and 2), if filed correctly.

Point 3 (ten per cent.). Grooves are liable to be made while using this file. Of course, none should be permitted.

Point 4 (ten per cent.). The inside is to be straight crosswise, as it would be possible to file to line on both sides, and have no grooves, and still not have the centre filed straight across. Points 5 and 6 serve essentially the same purposes as Points 4 and 5 in Piece No. 4. Point 7, no cross-marks, is reduced to six per cent. Points 8 and 9 correspond to Points 7 and 8 in Piece No. 4, with the same percentage.

It will be seen that the new manipulation, taught in Piece 4 (Points 1, 2, and 3), gives the pupil forty per cent., and that the new manipulation, taught in Piece No. 5, gives him forty-four per cent., leaving over fifty per cent. for the practice of the former manipulations, with the files used on previous pieces.

The above, Pieces Nos. 1 to 5 inclusive, constitute the first division of the course in vise-work, and are classed as exercises in "Filing to Line."

PIECE NO. 6 (WROUGHT-IRON); TIME, ELEVEN HOURS.

Point No. 1.	Filed to within $\frac{1}{64}$ of an inch of the template on one edge, ...	20 per cent.
2.	Filed to within $\frac{1}{64}$ of an inch of the template on two edges, ...	20 "
3.	Filed to within $\frac{1}{64}$ of an inch of the template on three edges, ...	20 "
4.	Filed to within $\frac{1}{64}$ of an inch of the template on four edges, ...	20 "
5.	No cross-marks on edges, ...	10 "
6.	" " on one side, ...	5 "
7.	" " on either side, ...	5 "
		100 "

Tools used: 10″ half-round bastard, 9″ half-round second cut, 5″ half-round smooth, 6″ half-round super. (Swiss), 8″ hand smooth, 7″ hand super. (Stubbs) files and 7″ hack-saw (Stubbs), $1\frac{1}{2}$″ try-square.

The purpose of this piece is fourfold: first, to introduce a new metal for the pupil to work on; second, to convey a thorough idea of the great utility of the half-round file in several ways; third, to teach the use of the hack-saw in conjunction with the file; and fourth, to teach the art of filing across a narrow edge to a template instead of to a line.

In inspecting this piece, the edges of which are the worked surfaces, I divide the entire edge or edges into four parts, thus: There is but one edge of the template that comes in contact with the piece at a time: I put the template on the side nearest the edge on which the initials of the pupil are stamped for "Point 1," and the opposite side for "Point 2," and so on to the fourth edge.

The other three points relate to cross-marks, and are divided conveniently for impartial inspection, but give more credit than the points covering similar ground in the inspection of the last three pieces, because the metal is tougher and finer; and for the additional reason, that since the finishing files are the finest in use, a cross-mark will show plainer if left on the finished surface.

Piece No. 7 (cast-iron); Time, twelve hours.

Point No. 1.	Equal number of lines on each side, . . .	20	per cent.
2.	" depth of lines, ...	20	"
3.	Diamonds of equal size, ...	30	"
4.	Square on back, ...	10	"
5.	Grooves square on sides and bottom, . .	15	"
6.	No cross-marks, ...	5	"
		100	"

Tools used: 10″ hand second cut, 8″ hand smooth, and 6″ half-round super. (Swiss) (try-square on back only).

This piece I designed for "free-hand filing," and the pupil should determine all distances by the eye alone (copying the distance between the two first grooves on one side as made by the instructor), without the aid of a measuring instrument. But a try-square may be used on the back.

Points Nos. 1, 2, 3, 4, and 6 need no further explanation. Point 5 is to prevent the pupil from holding the flat side of the file too much on a bevel; in which case, instead of leaving the diamonds flat on top, as designed, they would become pointed pyramids.

Piece No. 8 (cast-iron); Time, twelve hours.

Point No. 1.	Equal thickness of ring, ...	40	per cent.
2.	Inside hole to fit steel plug, ...	20	"
3.	Good corners, ...	10	"
4.	No grooves or bunches, ...	15	"
5.	Sides of tang parallel to each other, . . .	5	"
6.	Square crosswise on tang, ...	5	"
7.	No cross-marks of coarse files, ...	5	"
		100	"

Tools used: 10″ hand bastard, 10″ half-round bastard, 9″ half-round second cut, 5″ half-round smooth, 6″ half-round super., 9″ and 6″ round bastard, 8″ hand smooth, 4½″ and 1½″ try-squares and calipers.

This piece is intended to show how the half-round and round file are used in conjunction with each other in doing free-hand work, bringing into practice instruction given in all former lessons, and using nearly all shapes of files thus far used in the course. It is, in short, a review piece, but gives instruction in the use of a new tool, the calipers. The pupil is instructed, in the first place, to remove the scale from the outside with the same file, and in the same way as on Piece No. 1; this being done, he files the outer surface with a hand-file or a half-round file until the piece measures alike on the sides and edges lately filed, thus making the four sides of the ring part of equal width. We have now the same problem as in Piece No. 2, to make it octagonal from a square bar, the only differences being that Piece No. 2 is straight and this circular in form. Piece No. 2 was larger than this, and guiding-lines were drawn on it, but are forbidden in this case. One edge is bevelled off with the large half-round file on the outside, and with a 9″ round file the opposite inside edge is filed. The half-round file is used as in Piece No. 6, and the round file is used exactly as in Piece No. 5, but the results produced by both are different. The eight-sided section is made sixteen-sided, and, finally, round. In all this work the pupil has no guide other than his eye and his calipers, and the practice of Piece No. 7 is essentially repeated. On the sides of the tang the same practice as on the edges of Nos. 3, 4, 5, and 6; and on the part where the ring and the tang meet, the pupil is taught to make a corner of entirely different shape than any previous one. It must caliper correctly, and still be free from cuts or irregularity. The reamed hole is to be left of exactly the same size in the centre as when given to the pupil, the contour of the circle on the inside being a guide to the eye throughout the work.

The first point in the inspection is of course the most important, and is decided by the use of the calipers. I usually divide the ring into fourths with chalk-marks, and carefully test the work on the first quarter before going to the next; and so on until completed. Forty per cent. is given for this point. Point 2 gives twenty per cent. credit if the size of the centre of the reamed hole is not altered by the pupil. A steel plug, turned to fit exactly, is used in inspecting this point. Point 3: As the pupil has been taught the manner of making corners with flat files in Piece No. 4, and has had a different-shaped corner to make in Piece No. 6, the pupil is here taught to make a corner where the round part of the ring comes in contact with a flat surface; but as this case differs from the others only in some details of the manipulation of the files used, I give only ten per cent. credit for this point. In Point 4 the pupil gets credit for fifteen per cent. for having the ring free from bunches or grooves, while in Piece No. 5 he gets only ten per cent. for a similar point, the five per cent. being added because the tendency to produce grooves is greater in this case. It would not be equitable to give more than fifteen per cent., for the reason that forty per cent. is given to have the ring caliper evenly, which, of itself, nearly but not quite covers this point. Point 5 is inspected with the calipers, and is not difficult; therefore only five per cent. is given. Point 7 is added to further check the pupil from filing too far with the coarse files. Should he have done this, he cannot remove the marks without making the ring or the tang too small.

Piece No. 9 (cast-iron); Time, twelve hours.

Point No. 1.	Fit on one corner all along the ends of the three tangs,	15 per cent.
2.	Fit on both corners all along the ends of the three tangs,	15 “
3.	Fit on one corner all along the sides of the tangs,	10 “
4.	“ both corners “ “ “ “	10 “
5.	“ one corner all along the ends of the two tangs,	10 “
6.	Fit on both corners all along the ends of the two tangs,	10 “
7.	Edges to be plane surface,	15 “
8.	Square endwise,	10 “
9.	Good corners,	5 “
		100 “

Tools used: 6″ square second cut, 6″ pillar bastard, 6″ pillar super., 8″ hand smooth, 10″ hand second cut, calipers, and two try-squares.

This piece is intended to be a test piece for the pupil, showing the importance, in a practical way, of observing strict accuracy when fitting two pieces together, and compelling the pupil to use judgment, skill, and a great deal of patience in making a good joint at the many edges. It will also demonstrate to him, that if every minor point be strictly conformed with, the whole problem will surely be solved correctly.

Point 1 gives fifteen per cent. credit, or five per cent. on each part, where the two pieces come in contact with each other on one corner, at the end of each of the three tangs. The reason why the inspection at the end is divided into two points, taking one corner after the other, is, that if the pupil should file the edge a little more on one side than the other, he *might* make a perfect fit on one corner of the end of the piece and leave an opening on the other; yet, even if he does so, he should have credit for what he has performed correctly, according to the principles of this mode of inspection. It will be noticed that both sides of the pieces, and the ends of the three tangs, are planed before being put into the student's hands. I make the planed ends the basis of the work done on both pieces. The piece D is the first piece filed, and is lined, so that the first part of the work is "filing to line," as practiced in the beginning of the course. After the pupil has filed to line, he is told to use his small square, taking the planed ends as a basis, and carefully test the surface filed to line, and perfect them to the greatest degree of accuracy; and if it is necessary to file out the line to make the surfaces perfectly square with the planed ends, to do so, as there is stock enough in the other piece to fit it, even after losing the line. The other piece is then similarly treated, the lines on this piece being simply to enable the pupil to file down nearly to the right size in a short time, and then he is guided entirely by the size of the piece D in making the fit.

It will be seen by the above explanation that the requirements of the first six points are, that the edges of the tangs of both pieces are to be brought squarely in contact with each other, and that failure to accomplish this at any point or part of the fitted edges will cause a reduction of rank. It will also be seen that every mistake or negligence of the pupil is in full view when the piece is completed. Point 7, fifteen per cent.: If the pupil should not get the edges square to the sides of the pieces, it would be impossible to have a good fit, or, in other words, if the pieces were convex to each other, they would not fit well at the corners; therefore, fifteen per cent. is added to the pupil's credit for this point. Point 8, ten per cent., is for having the outside edges of the piece, when fitted together square all around, as in Pieces Nos. 4 and 5. Point 9 is to prevent the pupil from rounding the corners, and deserves an extra merit of five per cent.

Piece No. 10, rectangular slide (steel) ; Time, eight hours.

Point No. 1.	Good joints on bottom of slide, both edges,	20	per cent.
2.	" " on sides and top,	20	"
3.	Top of slide flush with sides and square from sides,	15	"
4.	Square both sides, from bottom on outside,	10	"
5.	Ends flush with sides and square from sides,	10	"
6.	No cross-marks,	5	"
7.	Slide to push through with finger and fit both ways,	20	"
		100	"

Tools used: 10″ hand second cut, 6″ half-round super., 8″ hand smooth, 7″ hand super. files, and large and small try-squares.

This piece is the second piece in fitting, and the pupil is now taught to work steel for the first time. The design of this piece is to show the difference in getting a fine surface on steel from that of cast-iron or wrought-iron, and at the same time to continue the practice of fitting and of squaring the sides, ends, and top of the rectangular piece, similar to the work done on former pieces. It is also designed to show the differences in handling and caring for the files when working on steel.

Point 1 is to secure a good fit on the bottom of the inside of the groove, making it absolutely necessary to make good corners on the sides of the base. If this is not accomplished, the slide will not go quite down. For instance, if the pupil should round the inside corner, or fail to keep the slide square on the corners coming in contact with the inside of the base, it would be impossible to make a good joint; therefore, he gets twenty per cent. credit on this point alone.

Point No. 2 is to compel the pupil to keep the sides of the slide fitting into the base perfectly square to the bottom of it, else the joint on the top would be open; this being of the next importance, we give twenty per cent. for it.

Point No. 3 is to give a well-finished top, perfectly square to the sides, to the piece, when completed. Point No. 4: The sides to be square from the bottom; but as the sides are nearly square when the piece is given to the pupil, he is only credited with ten per cent. if it is finished correctly. Points Nos. 5, 6, and 7 need no further explanation.

PIECE No. 11, DOVETAILED SLIDE (STEEL); TIME, EIGHT HOURS.

Tools used: Same as in No. 10.

This piece is more difficult than the rectangular slide to fit, but still the same table is used in inspecting it as in No. 10; and as the instruction is only different in filing on the bevelled sides of the slide, a recapitulation of the points is unnecessary.

HAND-VISE FILING (FREE-HAND).

PIECE No. 19, STEEL WIRE; TIME, ONE HOUR.

Point No. 1.	Equal thickness of wire from end to taper,	25	per cent.
2.	True taper on point,	25	"
3.	No bunches or grooves,	25	"
4.	Point in centre,	25	"
		100	"

Tools used: 8″ hand smooth, 7″ hand super., 4½″ hand-vise, and calipers.

It is intended to teach the pupil, while making this piece, the manner of using the left hand (or to a left-handed man the right hand), which is peculiar to hand-vise filing, and at the same time how to complete a definite piece of work that is of consequence in the succeeding pieces, and in fact to teach him the rudiments of the art.

Point No. 1 is to induce the pupil to use care in finishing the wire from the end to the part where the taper merges into the original size of the wire, and not file flat places, which are sure to occur if the work is not constantly turned with the left hand. The pupil here uses the calipers as a test of the accuracy of the work.

Point No. 2 is to caution the pupil against getting the point one-sided or flat, or uneven on the sides of the point.

Point No. 3 is to prevent irregularlty and bunches, which are likely to be made anywhere on the piece, if the work is not turned evenly.

Point No. 4 is to secure the main object of the piece, which is to file a perfect tapering point with the point in the centre.

PIECE No. 20, STEEL WIRE (SCREW BLANK); TIME, TWO HOURS.

Point No. 1.	Square shoulder,	25	per cent.
2.	Equal thickness from shoulder all ways,	25	"
3.	No bunches,	25	"
4.	Screw blank in centre,	25	"
		100	"

Tools used: 10″ hand second cut, 7″ hand super., 8″ hand smooth, calipers, and hand-vise.

This piece is intended to improve the skill of the pupil at hand-vise work, and to enable him to reduce the diameter of the wire for part of its length at a square shoulder.

Points Nos. 1, 3, and 4 need no further explanation. The pupil in Point No. 2 is required to keep the small part filed of an even thickness to a size which is given him at the commencement of the exercise, and also the part of the wire finished must be of a uniform thickness. As each point is considered to be of equal importance in this piece, uniform credit given is for all points.

PIECE NO. 21, STEEL WIRE (ACORN); TIME, THREE HOURS.

Point No. 1.	Acorn in centre,	20	per cent.
2.	Square shoulder on end of cup and good cup,	20	“
3.	True taper from bottom of cup to top of wire,	20	“
4.	No bunches or grooves,	20	“
5.	Equal thickness of wire from end to taper,	20	“
		100	“

Tools used: 8″ hand-smooth file, 7″ hand super., 5″ half-round smooth, 6″ half-round super., calipers and hand-vise.

In the preceding pieces it may be noticed that only flat files are used in reaching the required result. This design (No. 21) is to bring into use the half-round file as well, and to test the pupil's skill in filing from memory an acorn of his own design, the workmanship of which alone is criticised.

Points Nos. 1, 3, 4, and 5 will be readily understood. Point 2 is to have the shoulder on the top of the cup of the acorn evenly drawn around the wire, so that it will be the same distance all around from the point, and also to have the cup rounded on the underside in a symmetrical and graceful shape, to imitate as nearly as possible one of turned steel.

PIECE NO. 22, STEEL WIRE (SCREW); TIME, FIVE HOURS.

Point No. 1.	Threads equal distance apart,	30	per cent
2.	Threads of equal depth,	30	“
3.	Point in centre,	10	“
4.	Threads not to lean either way,	20	“
5.	Sides of threads straight bevelled,	5	“
6.	No bunches or grooves,	5	“
		100	“

Tools used: 10″ hand second cut, 5″ half-round smooth, 5″ three-square, 6″ half-round super., 7″ hand super. hand-vise and calipers.

The pupil is required in this as in the preceding pieces of hand-vise filing, to be guided entirely by the eye and calipers, the latter only on the diameter of the wire. In obtaining the results required, the practice in this piece is similar to that of Piece No. 7 in the regular course, the main difference being that in Piece No. 7 the pupil filed a number of short straight grooves, taking the distance between them from the first two made by the instructor; while in this case the pupil files one continuous V-shaped groove, encircling the wire as it moves along its length, taking the distance between turns from the distance between the first turn to the second, or the pitch marked on the surface by the instructor.

Points Nos. 1, 2, and 3 need no explanation. Point No. 4 requires that the top edge of each thread shall be at the same angle with the centre line of the wire throughout the length of the thread; any change in the angle either way would destroy the practical value of the screw. Point No. 5 ensures the sides of each thread to be perfectly V-shaped and brought to a sharp point. Point No. 6 requires the threads and also the part of the wire not cut with threads to be smooth and well finished.

Very respectfully,

VALENTINE WALLBURG,
Instructor in Vise-work.

I add the class-record on Piece No. 5. This one is selected simply because the record is based upon the largest number of elements. The column A is the list of students; the columns one to nine correspond to the points in the analysis, and in each it will be noticed that the number indicates what the student lacked of getting the maximum; the column B is the percentage earned on Piece 5, and the column C is the average percentage on all the pieces in the course, including chipping.

The first thirty-two students on the list belong to the first year of the School of Mechanic Arts. The minimum age of these students on admission is fifteen years. The following six students are in mechanical engineering, and the remaining six optional students from other engineering courses. It will be noticed, that the younger students do not, upon the whole, suffer in comparison with those who are three years older in rank.

CLASS-RECORD ON PIECE NO. 5.

A	1	2	3	4	5	6	7	8	9	B	C
1, . . .	–	–	1	4	–	6	1	1	1	86	89.4
2, . . .	–	4	3	2	1	2	–	2	1	85	94.0
3, . . .	–	1	3	1	1	3	–	1	1	90	92.3
4, . . .	–	–	1	2	–	1	–	2	1	93	86.4
5, . . .	3	1	2	2	1	3	–	1	1	86	85.4
6, . . .	3	1	1	1	–	3	–	1	1	89	91.1
7, . . .	–	–	1	2	–	1	–	–	–	96	94.4
8, . . .	–	1	1	–	–	1	–	1	1	95	97.2
9, . . .	–	–	1	–	–	1	–	1	1	96	95.6
10, . . .	–	1	1	–	–	2	–	1	–	95	92.5
11, . . .	12	12	3	3	3	8	6	8	5	40	79.1
12, . . .	2	3	3	–	5	–	–	5	4	78	86.8
13, . . .	–	–	1	2	–	1	–	1	1	94	96.1
14, . . .	–	–	–	1	1	2	–	–	1	95	95.5
15, . . .	2	4	3	4	–	3	–	1	1	82	88.2
16, . . .	–	1	3	3	–	–	–	1	–	92	92.0
17, . . .	–	–	–	1	–	2	–	–	1	96	88.3
18, . . .	1	–	–	1	–	2	–	–	1	95	87.5
19, . . .	–	1	1	2	–	5	–	3	2	86	88.2
20, . . .	1	2	1	2	–	3	–	2	1	88	87.0
21, . . .	1	1	1	2	–	1	–	–	–	94	93.3
22, . . .	1	3	3	2	1	4	–	1	1	84	85.7
23, . . .	5	8	6	7	4	10	1	4	4	51	66.6
24, . . .	4	8	2	2	1	1	–	1	1	80	84.4
25, . . .	2	4	4	3	–	5	–	1	1	80	83.8
26, . . .	–	1	–	1	–	1	–	1	1	95	90.6
27, . . .	–	–	–	1	–	1	–	1	–	97	96.3
28, . . .	7	10	5	2	–	4	–	2	2	68	77.6
29, . . .	2	2	2	4	–	4	–	3	2	81	91.2
30, . . .	–	–	–	1	–	2	–	1	1	95	88.0
31, . . .	–	–	3	2	–	1	–	1	–	93	91.0
32, . . .	–	–	–	1	–	1	–	–	–	98	92.9
33, . . .	1	1	2	1	–	1	–	1	–	93	77.0
34, . . .	–	–	1	1	–	2	–	1	1	94	81.5
35, . . .	–	–	5	5	2	5	–	1	4	78	81.3
36, . . .	–	–	1	1	–	2	–	1	1	94	91.3
37, . . .	3	3	3	1	–	–	–	2	–	88	88.5
38, . . .	1	2	2	1	–	1	–	1	–	92	*
39, . . .	7	–	7	5	–	2	–	2	1	76	87.6
40, . . .	–	–	–	1	–	–	–	1	1	97	92.1
41, . . .	–	–	1	1	–	3	–	2	1	92	86.1
42, . . .	–	–	2	1	–	2	–	–	1	94	95.3
43, . . .	1	1	–	1	–	1	–	–	–	96	*
44, . . .	–	–	1	–	–	1	–	1	–	97	*

* Optional students, who did not complete the course.

The second course in vise-work includes the remaining processes, arranged as follows :—

I. Scraping. Three test-surfaces made from blanks of Piece No. 1, in the filing course.

II. Breast-drilling. Pieces of cast-iron, of wrought-iron, and of steel, to learn to drill from flat surfaces, and from sharp edges and corners, at different angles, and with different-sized drills.

III. Tapping. Tapping the holes drilled in II. with both right and left hand taps.

IV. Reaming. Reaming holes drilled in II., to perfectly fit true gauges of different sizes.

V. Thread-cutting with dies and jam-plates. Examples in steam, gas, and water piping and fitting.

VI. Soldering. Tin, iron, iron and brass, iron and steel, plumbers' joints.

VII. Brazing. Iron, iron and steel, brass, brazing with silver solder.

VIII. Burnishing.

IX. Stoning.

X. Bluing.

Soldering, brazing, and bluing are classed with vise-work, to save multiplying courses. This second course in vise-work has been worked out by Mr. Wallburg, but has not yet been gone over by the class.

The Course in Forging.—The shop is fitted with eight forges. The Sturtevant pressure-blower, which furnishes the blast for the forges, and for the furnace in the foundry, is placed in the engine-room. The hoods over the forges are connected with a 16-inch pipe, which runs longitudinally near the ceiling of the shop, and enters a No. 7 Sturtevant exhaust-blower, just through the partition in the foundry, M, and thence through the embankment and foundation of the main building, into a flue at its northerly end on Newbury Street. As the acquiring of manual skill in the art is the principal aim, only such tools are furnished as are necessary to this end, but none of the appliances which are simply used to facilitate work. I will now give a brief statement of the analysis of the art upon which we have based our course of instruction. In the infancy of the art the forger was obliged to operate upon irregular-shaped masses of metal, and work them into the required form and dimensions. Now the manufacturing works furnish us with iron and steel bars of any given shape and size in cross-sections, and with this material the forger has to deal. It is found that the forger's art is substantially comprised in the six following statements :—

First. The management of the fire and degrees of heat.
Second. Bending, without changing, the cross-section.
Third. Drawing down or reducing the cross-section.
Fourth. Jumping, or upsetting ; that is, shortening the piece and increasing its cross-section.
Fifth. Building up, or welding.
Sixth. Hardening and tempering.

Splitting and punching may be added as elementary processes often used.

Plates I., II., III. show the series of designs used to teach the manipulations in these fundamental processes. Next, forms are designed in which these elementary processes are combined ; and thus, step by step, the student's skill in the art is built up. Experience has already taught us that the shorter and more distinct the steps are, the more rapid will be the student's progress. The following grouping will indicate the main features of the course. The same system of inspection is followed as in the filing course.

Catalogue of Forgings.

Nos. 1–9. Bending.
10, 11. Bending and drawing.
12, 13. Bending and splitting.
14–18, 22. Punching and forming.
20. Welding.
21. Bending and welding. Ring of round iron.
23. Welding angle from flat bar. Weld at angle.
24. Bending and welding. Ring of flat iron.
25. Bending and welding.
26. Punching, splitting, bending and drawing.
27. Welding cross of flat iron. Weld at intersection.
28. Bending, drawing, punching and welding. Hinge hook.
29. " " " " Hinge eye.
30. Drawing. Key tapering $\frac{1}{16}$ inch in 6 inches.
31. Welding angle from round bar. Weld at angle.

No. 32. Welding T from flat bar. Weld at intersection.
33. Upsetting, bending, and welding.
34-36. Scarf-welds.
37. Faggot-weld.
38. Collar welded to scarf.
39. Upsetting, drawing, bending, welding, punching, and riveting.
40. Punching, drawing, and upsetting.
41. Upsetting, punching, and bending.
42. Steel. Drawing and tempering. Punch, from old file. Color, blue.
43, 44. Steel. Drawing and tempering cold-chisels. Color, deep blue.
45. Steel. Welding steel to steel and steel to iron.
46. Steel-spring drawing and tempering. Temperature indicated by oil.
47. Steel-spring drawing and tempering. Temperature indicated by soft pine.
48. Steel drill (large). Drawing, filing, and tempering. Water temper. Color, purple blue.
49. Steel. Straight edges. Upsetting and filing. Made straight without a standard.
50. Steel drill (small). Drawing, filing, and tempering. Color, straw color at point; faint blue at stem.
51. Steel matching tool. Drawing, filing, and tempering. Oil temper. Color, dark straw.
52. Steel centre punch. Drawing, filing, and tempering. Water temper. Color, purple blue.
53. Steel cape chisel (small). Drawing, filing, and tempering. Water temper. Color, purple blue.
54. Steel diamond-pointed hand tool. Drawing, filing, and tempering. Water temper. Color, straw.
55. Steel cape chisel (large). Drawing, filing, and tempering. Water temper. Color, deep blue.
56. Steel flat chisel (large). Drawing, filing, and tempering. Water temper. Color, deep blue.

Designing. This department is supported by the trustee of the Lowell Institute, and is open to pupils of both sexes.

Pattern-weaving. The object of this department is not to teach weaving, but to give the student a general idea of the way in which all woven fabrics are made, and to teach him to dissect any sample of cloth, and reproduce it upon the loom, as well as to exhibit his own designs in the woven fabric.

The first five lessons are devoted to learning the names of the various parts of the loom, and the function of each, the drawing in and mending of warp-threads, the filling of the shuttle, the oiling, the starting and stopping of the loom, and the weaving of a simple cloth with two or three harnesses and one shuttle.

The sixth lesson is devoted to putting the warp into the loom, hanging the harnesses, and setting the reed.

The seventh lesson teaches the running of a loom with eight to twelve harnesses and one or two shuttles.

The five following lessons are devoted to designing and weaving patterns upon an eight-harness loom running four shuttles.

The eight following exercises are upon designing, setting up, and weaving patterns upon a twenty-harness loom and four shuttles.

Two lessons upon drawing in warps from drawing in drafts made by the student. The work done in these two lessons is put upon the loom and woven.

The next eight lessons are upon an improved Crompton-Jacquard loom, consisting of designing, setting up, drawing in, and weaving various patterns.

The looms in possession of the department have been presented, one by the Lewiston Machine Co. of Lewiston, Me.; one by the Bridesburg Manufacturing Co. of Philadelphia; one, an English loom, by Mr. Edward A. Brigham of Boston; and two by Mr. George Crompton of Worcester, one a twenty-harness and four-shuttle loom, and one an improved Jacquard pattern loom, expressly designed and built for the department. The instruction, which is under the general direction of Mr. Charles Kastner, Lowell Instructor in Practical Design, is in the charge of A. D. Blodgett, S. B., class of 1876, Institute of Technology.

The Foundry contains sixteen moulding-benches, an oven for core-baking, and a blast-furnace which will melt about one-half a ton at a charge. The instruction in this shop is already in successful operation, under the direction of Prof. Whitaker.

The shop for carpentry and joinery is ready, and instruction in it will begin at the opening of the new term on February 5, under the direction of Prof. Ware.

The fitting up of the wood-turning shop with sixteen lathes is in the hands of the American Machine and Tool Co. of Boston; and the fitting up of the machine-tool shop for metal-working is in the hands of the Putnam Machine Co. of Fitchburg, Mass. Both of these shops will be ready early in the coming term, and will be in charge of Prof. Whitaker.

Let us now spend a few minutes upon the third point with which we set out; namely, is it feasible to introduce to any extent this manual element into our system of public instruction?

Suppose that we admit for the moment the educational value of the system to justify its introduction, and, further, suppose that a few special mechanic-art schools could soon begin to furnish teachers, then how could we proceed with the least disturbance to our system as it now exists?

The first question is, At what age have pupils sufficient physical development to enter upon any of these shop courses? We have found beyond question that brains as well as muscle are needed to attain rapidly to the highest success in manual skill; but it is also certain that more elementary courses could be designed, and the time of each lesson so shortened, that a well-developed boy of twelve could make fair progress. But it would take him longer to acquire the same skill, than it would after greater physical and mental development. I have no reason to doubt of success, if boys should be put upon the wood courses at twelve; but I should prefer fourteen, the earlier years having been devoted to the graphic arts, including the typographic.

There are three educational centres which we will consider separately: First, the city; second, the town, with its high school so situated as to accommodate all parts of it; and third, the district school. For the city two courses could be followed; first, to establish a mechanic-arts school, with a three years' course of mental and manual study judiciously combined, and open to graduates of the grammar schools upon examination; or to establish a series of art-shops in a central part of the city, and combine the instruction in them with the mental after a given age. These shops could also be open evenings for the purpose of the manual education of large numbers who could by no possibility have any other opportunity.

In the town the shops could well be made a part of the high school, or, if independent of any particular school, they could be used for such pupils, and in such connection with all the schools, as the authorities might decide.

In the district, a single room fitted up to teach the use of the saw, plane, chisel, and auger, the common woodworking tools, or what seemed best adapted to the locality, would be all that need be done.

The question is often asked, Why not make salable articles, and thus meet wholly or in part the cost of the instruction, and of the materials used? We should be obliged to make what would sell, which would at once break up any systematic and progressive series of lessons for developing skill in any special art; and, besides, when the student has once learned how to make an article fit for sale, it is not for his interest as a learner to make the same piece a second time. He needs a lesson of a little higher grade of difficulty,—one in which some modification of a manipulation already learned, or a new manipulation, is introduced. When the student has become familiar with the use of the tools in the few fundamental arts, and through the acquisition of such use has also worked out the elementary processes and combined them into the ordinary typical forms to be found in practice, then he will be able to apply his knowledge in production; and the simple question is whether he shall at once apply this knowledge in manufacturing outside of the school at its market value, or whether the city or state should establish trade-schools, or manufacturing establishments, not only to teach the art-elements, but also to furnish an opportunity for their application in manufacture.

All experience has proved that to educate the individual or the race, we must expend money, not make it; and all attempts to evade this law have proved failures, and will to the end. All successful manufacturing not only demands, but is based on a knowledge of the arts and sciences which apply. The most artistic design, and the most careful and scientific selection and proportioning of the materials, will be of no avail if the manual skill be wanting; and this skill must be acquired through some system of teaching, or picked up without any system in the manufacturing shops. A series of art-shops, or laboratories, equipped simply for teaching can be provided for a comparatively small sum of money, and can be carried on, considering the teaching capacity, at a small expense.

Suppose, for instance, that we should confine ourselves in wood to—I. Carpentry and joinery; II. Wood-turning; III. Pattern-making; in iron, to I. Vise-work; II. Forging; III. Foundry-work; IV. Machine-tool work. It will be best to have but one room for wood, but so arranged that classes in I. and II. can be taught at the same time. In pattern-making only one section can be taught at a time, as each student will have to use both bench and lathe. If all the shops are arranged to teach sections of sixteen, it will be seen that ninety-six students can be taught at a time; and if each student gets but three shop-lessons per week, of four hours each, the teaching capacity of these shops will be three hundred and eighty-four students. If the length of each lesson be two hours instead of four,—and lessons shorter than two hours would not be desirable,—the teaching capacity of the shops would be doubled. If sixty two-hour lessons should be given in each of the six courses, we could in three years, of forty weeks each, carry seven hundred and sixty-eight students over the ground. If the series of samples to be used in each shop are made as part of the instruction in other shops, thus reducing the expense to first cost of materials, the cost per student for materials will not exceed ten dollars per year. Each shop will need an expert teacher at a salary, say, of $1,000 per annum. The expense per student, for this element of his education, would be $17.81 per year.

These shops would still be available for evening classes, which would add, giving each student three two-hour lessons per week, one hundred and ninety-two students per year to their teaching capacity, and thus reduce the average cost per pupil. Having the proper rooms, the cost of fitting up this series of shops would not, at the outside, cost over $20,000. To fit up a shop for teaching carpentry and joinery to sections of sixteen would not cost, including sixty-four sets of tools, over $1,500. If most of the tools should be used in common,—or better, if the same set should only be used by the students, who, in succession, occupy the same bench,—the expense would be under $500.

This system of mechanic-art teaching is earnestly commended to all, with the assurance, that, in the hands of competent and faithful teachers, it will prove entirely successful, not only on educational, but also on economical grounds.

JOHN D. RUNKLE.

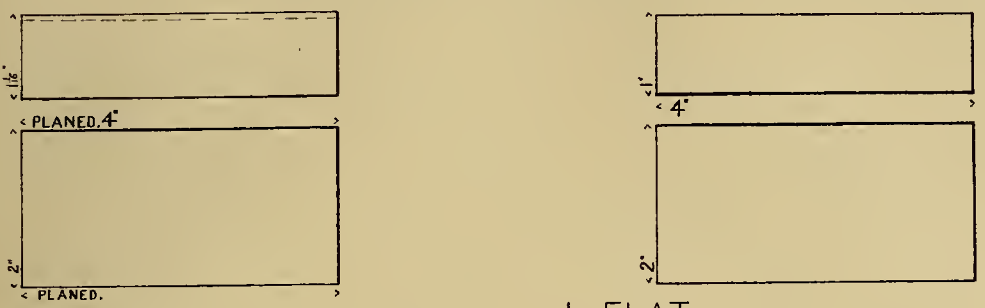
INSTITUTE OF TECHNOLOGY,
BOSTON, January 22, 1878.

COURSE IN VISE WORK.

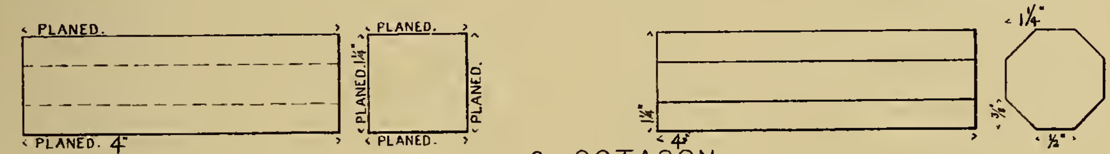
PLATE I.

CASTINGS AND FORGINGS AS THEY COME TO THE STUDENT ‖ ARE LEFT BY THE STUDENT.

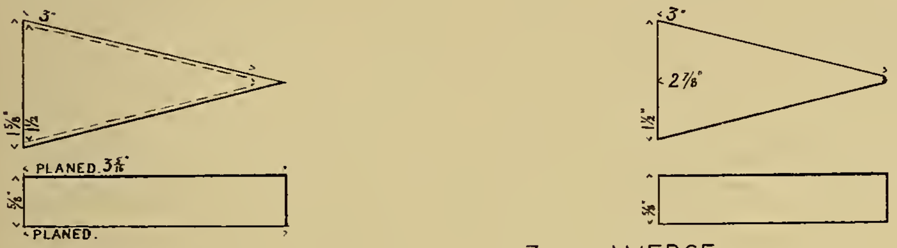
I.–FILING TO LINE. ALL CAST IRON.



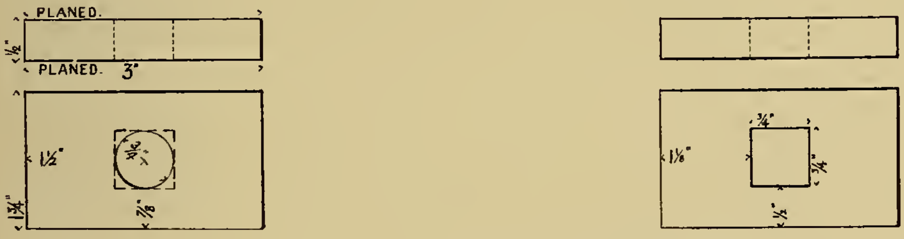
1. FLAT.



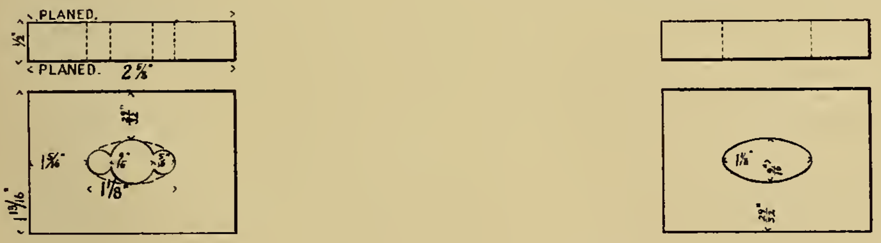
2. OCTAGON.



3. WEDGE.



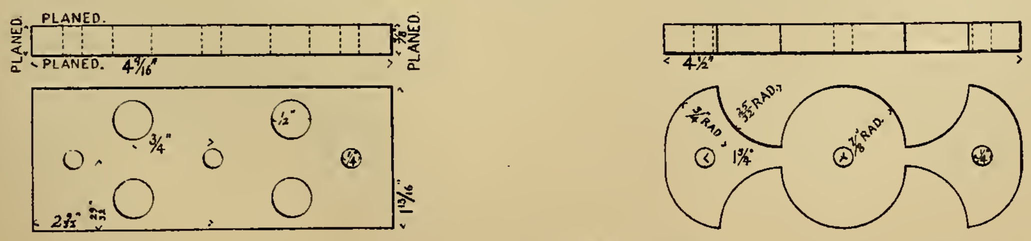
4. SQUARE HOLE.



5. OVAL HOLE.

THE LINES COMPOSED OF LONG DASHES INDICATE FULL LINES DRAWN UPON THE METALLIC BLANK.

II–TEMPLATE WORK. SAWING AND FILING.



6. WITH WORKING TEMPLATE. WROUGHT IRON.

DESIGNED BY V. WALLBURG. SCALE ¼ SIZE. CLASSIFIED BY CHANNING WHITAKER

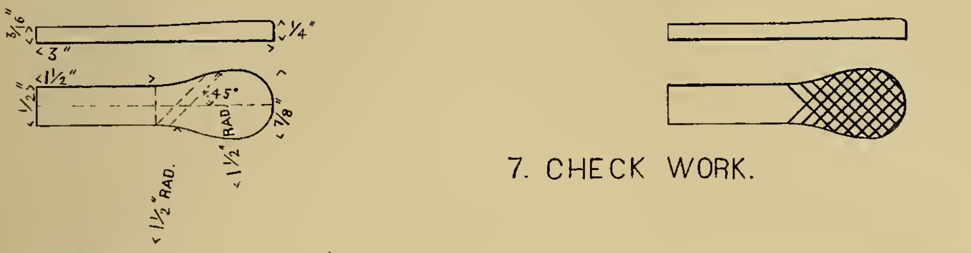
The Heliotype Printing Co. 220 Devonshire St Boston

COURSE IN VISE WORK.

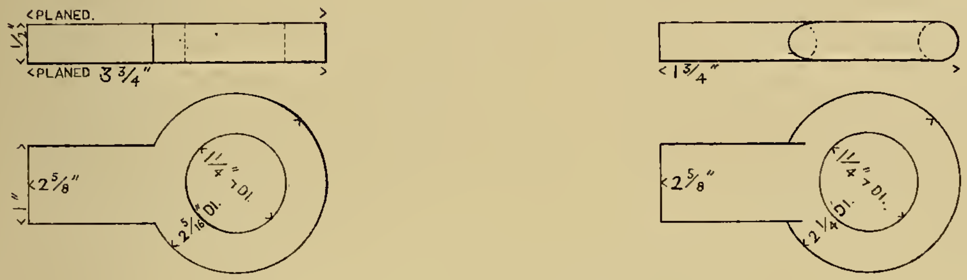
PLATE II.

CASTINGS AND FORGINGS AS THEY COME TO THE STUDENT. ‖ ARE LEFT BY THE STUDENT.

III.–FREE HAND FILING. BENCH VISE. BOTH CAST IRON.

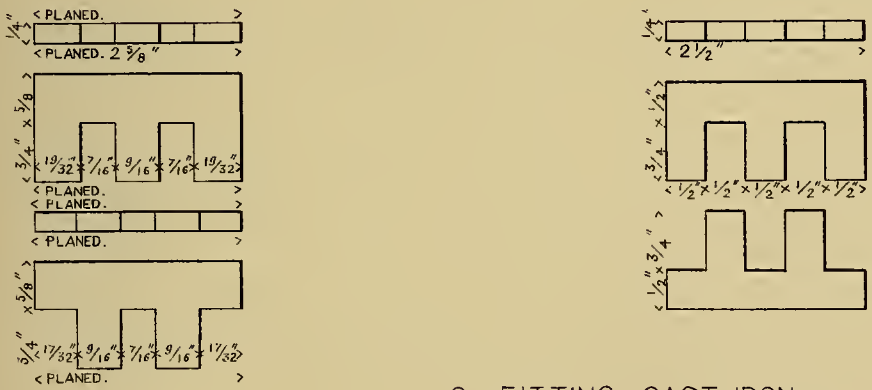


7. CHECK WORK.

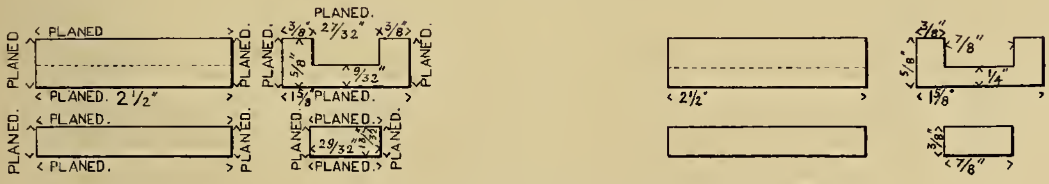


8. RING WORK.

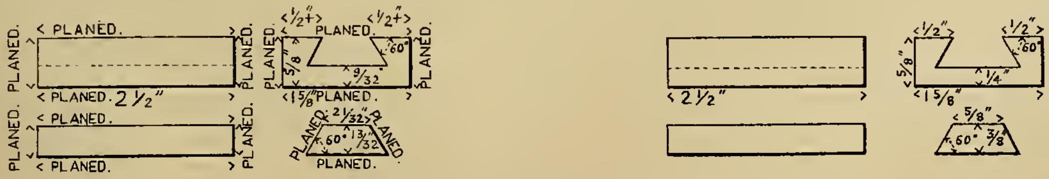
IV.–FITTING.



9. FITTING. CAST IRON.



10. RECTANGULAR SLIDE. STEEL.



11. DOVE-TAIL SLIDE. STEEL.

DESIGNED BY V. WALLBURG.

SCALE ¼ SIZE.

CLASSIFIED BY CHANNING WHITAKER

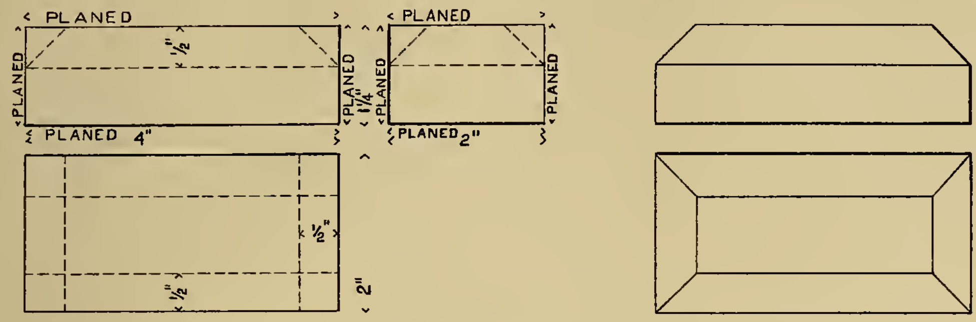
THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST BOSTON

COURSE IN VISE WORK.

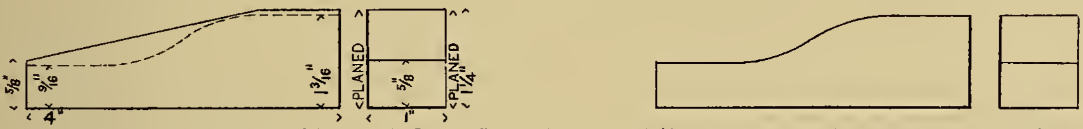
PLATE III.

CASTINGS AND FORGINGS AS THEY COME TO THE STUDENT. ‖ ARE LEFT BY THE STUDENT.

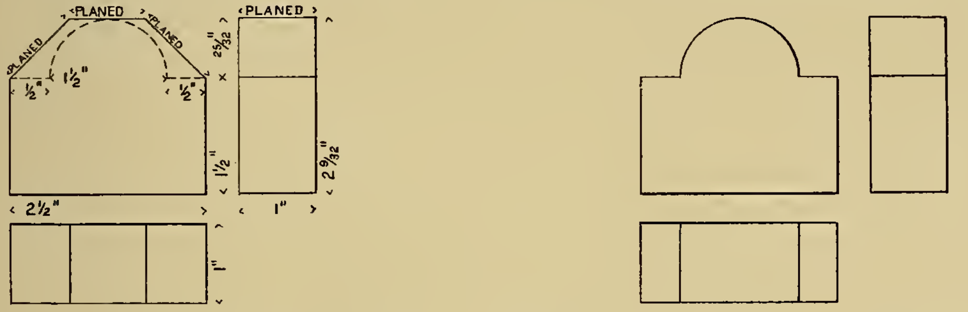
V.-CHIPPING.



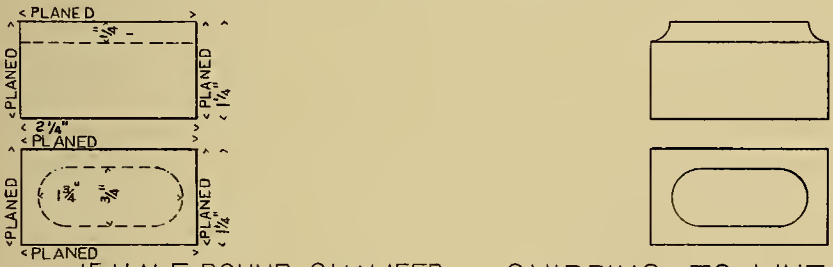
12. CHAMFERED SURFACE. CAST IRON.



13. REVERSED CURVE SURFACE. CHIPPING TO LINE. CAST IRON.

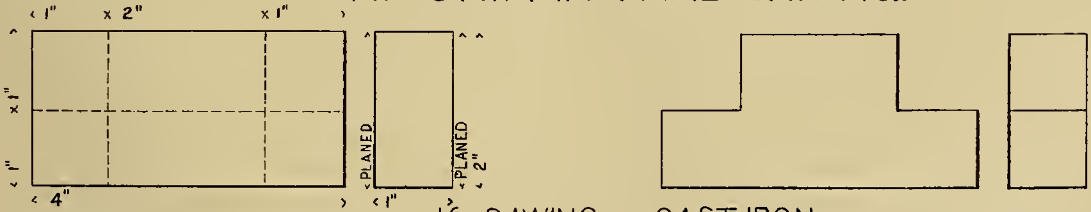


14. HALF CYLINDER. CHIPPING TO LINE. WROUGHT IRON.

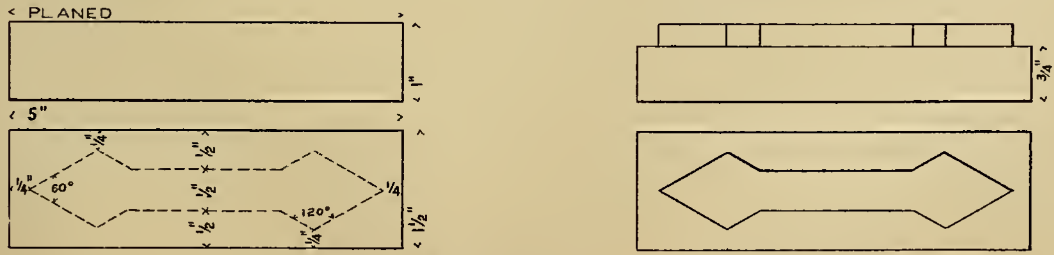


15. HALF ROUND CHAMFER. CHIPPING TO LINE. WROUGHT IRON.

VI.- CHIPPING AND SAWING.



16. SAWING. CAST IRON.



17. SAWING AND CHIPPING. WROUGHT IRON.

DESIGNED BY V. WALLBURG. SCALE ¼ SIZE. CLASSIFIED BY CHANNING WHITAKER

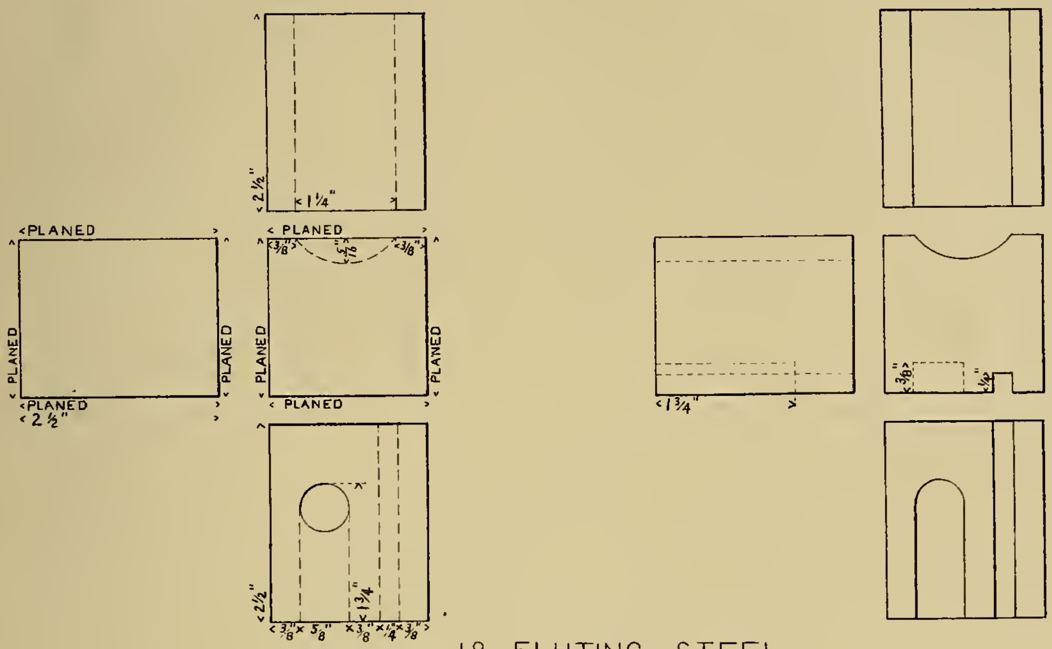
THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

COURSE IN VISE WORK

PLATE IV.

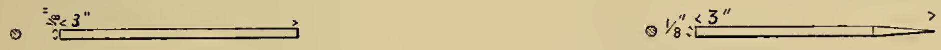
CASTINGS AND FORGINGS AS THEY COME TO THE STUDENT. ||| ARE LEFT BY THE STUDENT.

VII - CHIPPING. HALF ROUND CHISEL AND SPLINE WORK.

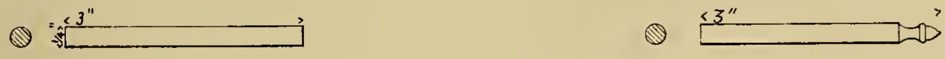


18. FLUTING. STEEL.

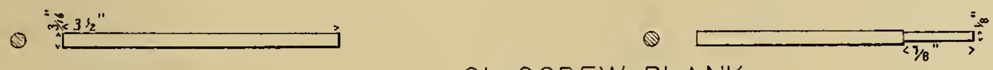
VIII. - FREE HAND FILING WITH HAND VISE. STEEL WIRE.



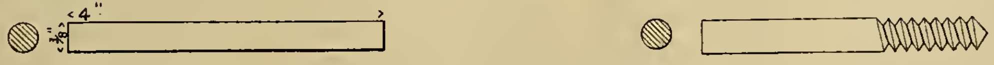
19. POINT.



20. ACORN.



21. SCREW BLANK.



22. SCREW.

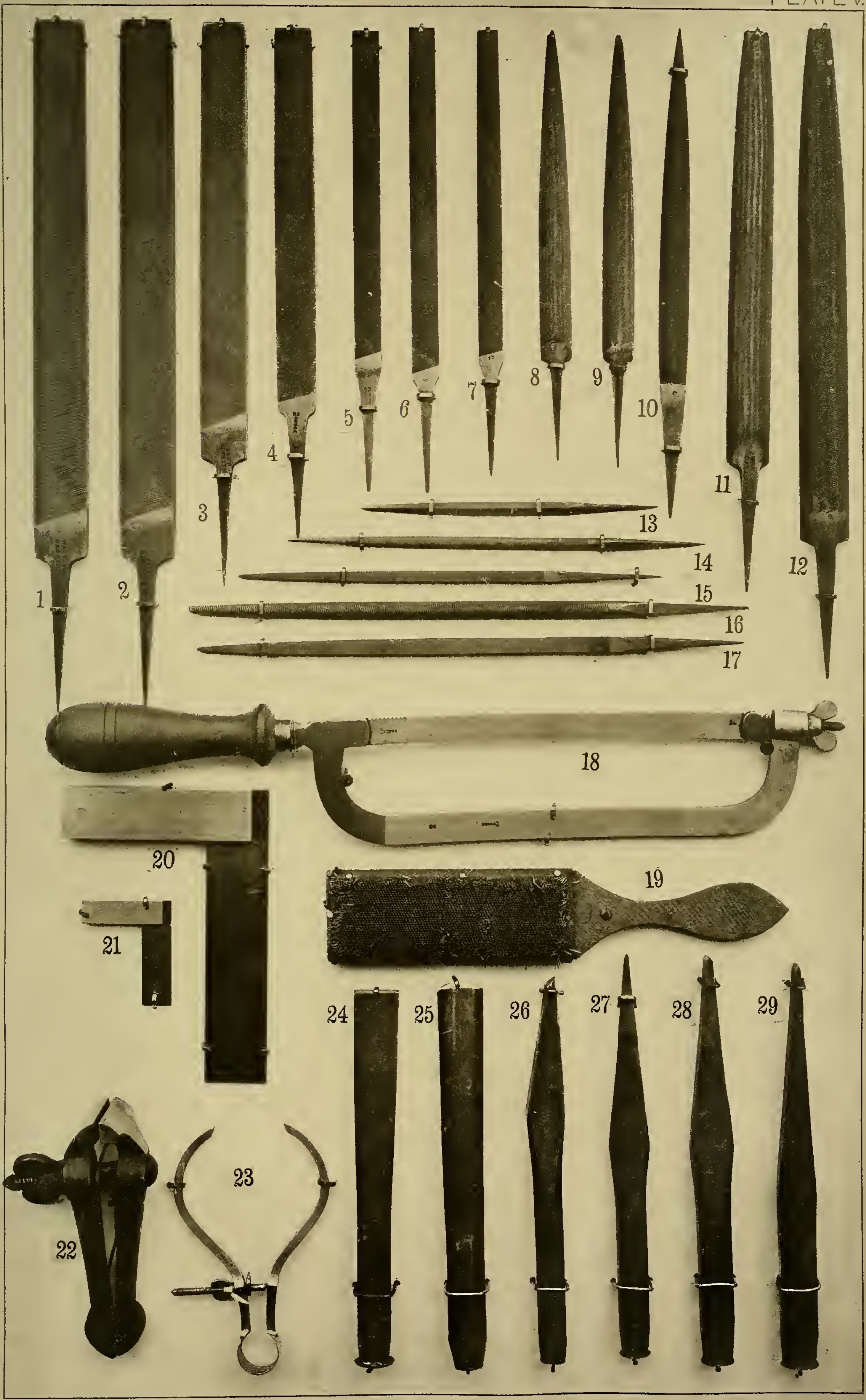
DESIGNED BY V. WALLBURG. SCALE ¼ SIZE. CLASSIFIED BY CHANNING WHITAKER

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

COURSE IN VISE WORK

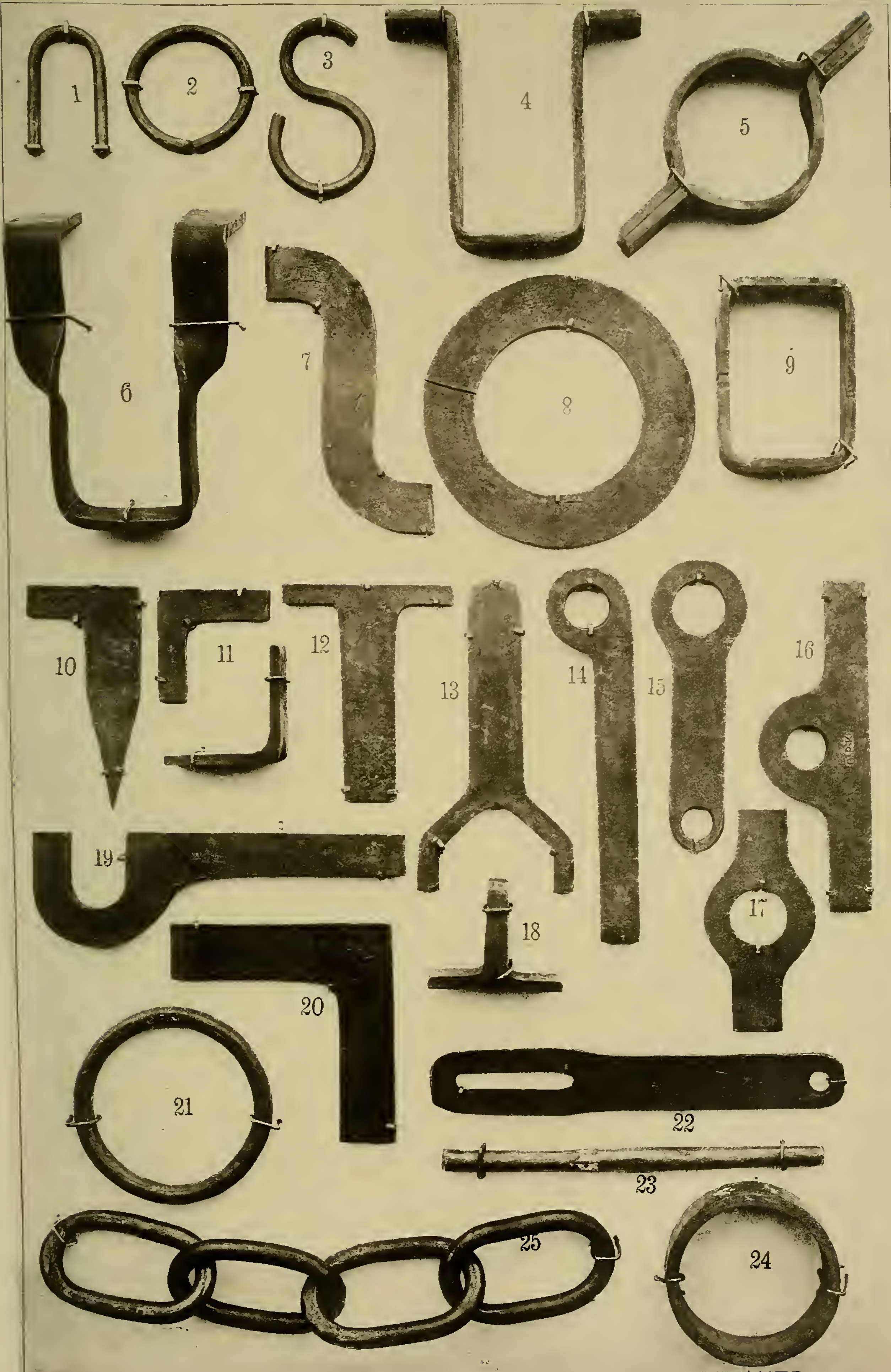
TOOLS.

PLATE V.



COURSE IN FORGING.

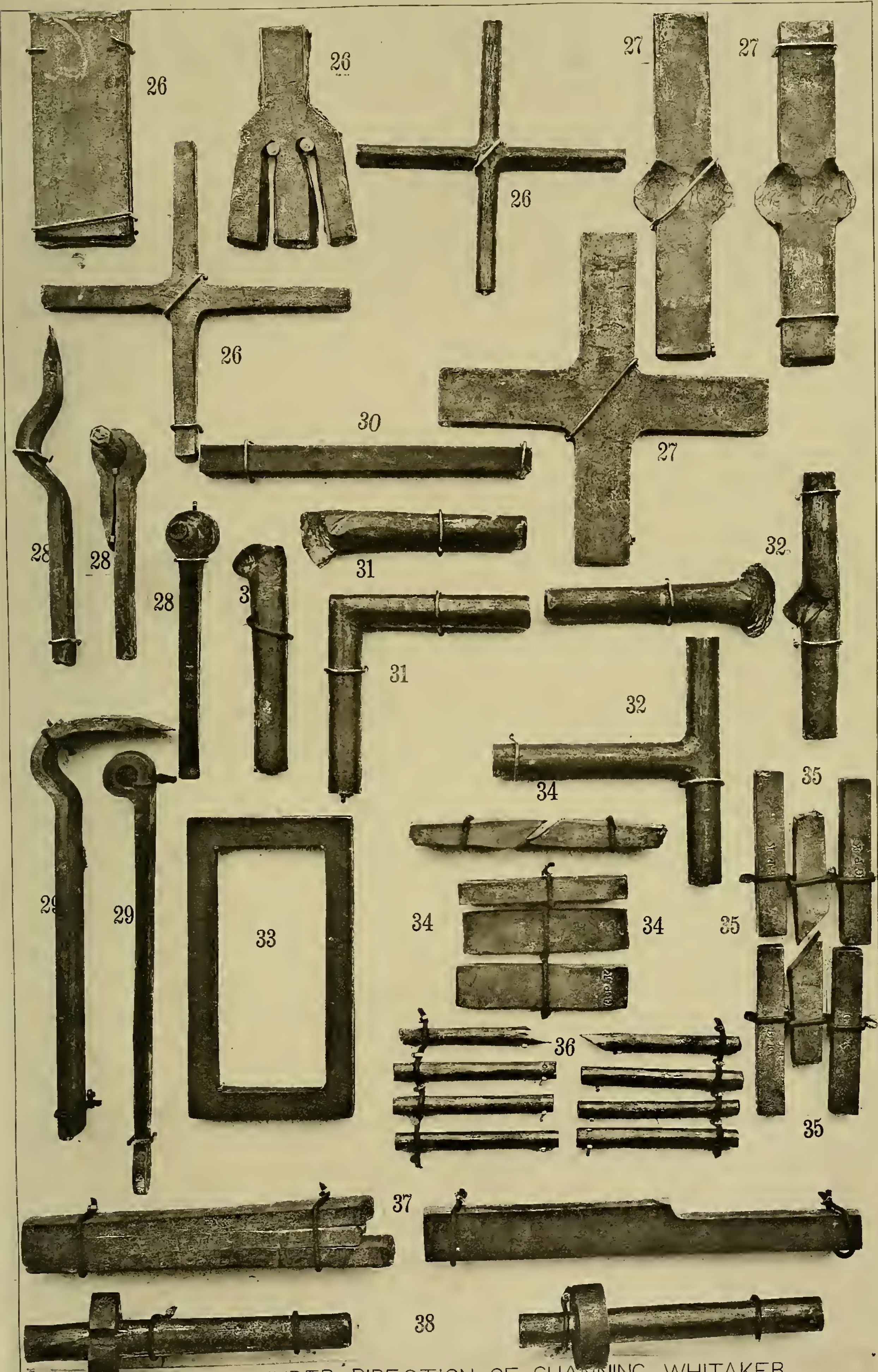
PLATE I.



DESIGNED UNDER DIRECTION OF CHANNING WHITAKER
BY JAMES BELL ASSISTED BY CHARLES T MAIN.

COURSE IN FORGING.

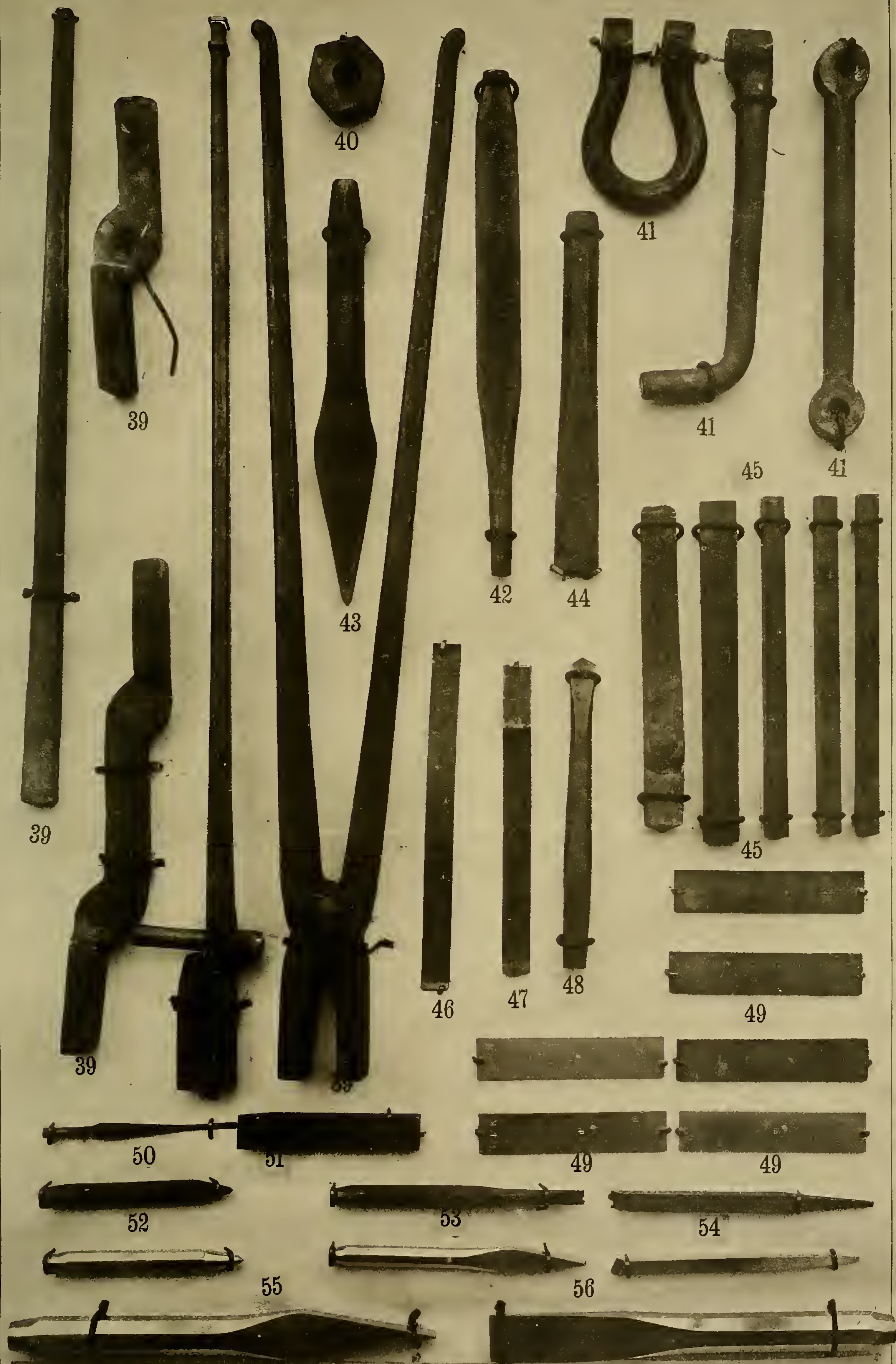
PLATE II.



DESIGNED UNDER DIRECTION OF CHANNING WHITAKER
BY THOMAS FOLEY ASSISTED BY CHARLES T. MAIN.

COURSE IN FORGING.

PLATE III.



DESIGNED UNDER DIRECTION OF CHANNING WHITAKER
BY THOMAS FOLEY ASSISTED BY CHARLES T. MAIN.

[E.]

THE INDUSTRIAL SCHOOL ASSOCIATION.

I have received from the Industrial School Association, of 23 Church Street, Boston, the following account.

It relates some doings of the Association not referred to in its last year's report, and states concisely the present condition of its work. It also announces the principal result, which it hopes to see accomplished, and toward which its efforts are directed.

Much of its last year's report is incorporated in the communication of Dr. J. D. Runkle, and further information can be had of its President, Rev. George L. Chaney :—

Since its organization in December, 1876, the Association has held fortnightly meetings, except during the vacation interval. Its members discussed the importance and the feasibility of making manual education a part of the public instruction. They determined to test the Russian system as applied to the education of a class of boys differing quite as much from each other, in their characteristics, as do the lads in schools not carefully graded. The experiment satisfied them that through this system manual education may be made an efficient part of the public instruction.

The Committee on Instruction reported in October last, that the Association would further advance the cause in which it was chiefly interested, should it adopt either of two courses of instruction for the coming winter. A course in the use of carving-tools might be given that would very properly follow the course in decorative ornament, which the drawing-books of Prof. Smith have made a part of the public instruction. Or a course in the use of the common wood-working hand-tools might be given, which would teach primary arts of the carpenter, the joiner, the ship-builder, the cabinet-maker, and of all the other craftsmen who practically use these tools. The students would "lay out" their own work, so that this course would very properly follow the public instruction which is now given in constructive drawing.

The Association adopted the latter course because the number of persons now using such tools in Massachusetts is, comparatively speaking, very great.

It is an essential part of the Russian system, in its developments among us, that the students are taught in classes, rendering it unnecessary to give any individual instruction except that which is demanded by individual peculiarities of temperament; and it is obvious, that if it is to have any extended application, everything must be done to make such class instruction easy and efficient.

This the Association believed could best be effected by means of a carefully prepared printed text, precisely setting forth every detail essential to the best performance of each manipulation. They also determined, that in the preparation of this text everything that forethought and study could do should be done, and nothing left to experience, but to finally perfect it. They have therefore authorized their Committee to employ the best service which they can command in the preparation and critical revision of a series of primary lessons in the use of wood-working hand-tools, to be followed by a similar series of more advanced lessons in applications of these tools to the production of typical forms in carpentry and joinery. Regarding their evening school chiefly in the light of an experimental laboratory for the perfecting of educational processes, they have used it as a test of the practical value of the text. Four gentlemen, who are specialists, have been made responsible, each for special details of the preparation of the text. It is hoped that these lessons will be just the aid which the teacher needs, and that they will contain, set down in explicit terms, exactly the information that the pupil will require, in order that these arts may be brought as completely within reach of the ordinary educational methods as are reading and writing.

At the moment that this report goes to press, eleven such lessons have been given, and nearly as many more are in an advanced state of preparation.

Those already given embrace the following topics:—

1. Use of the cross-cut saw. Sawing to line.
2. “ hammer. Striking square blows.
3. “ splitting-saw. Sawing to line.
4. “ jack-plane. Smoothing rough surfaces.
5. “ hammer. Driving nails vertically.
6. “ splitting-saw. Sawing at exact angles to upper surface.
7. “ jack-plane. Setting the plane iron.
8. “ hammer. Driving nails horizontally.
9. “ bit and brace. Boring in exact positions.
10. “ mallet and chisel. Mortising.
11. “ jack-plane. Producing surfaces which intersect at exact angles.

Auxiliary exercises, in laying out the work by measuring and lining, are incidental to all the lessons.

The first lesson is given in full as an illustration of the character of the text.

Lessons in Sawing to Line.

Cross-cutting on Trestles; Auxiliary Exercises in Measuring, and in Lining with Try-square.

Time.—Two hours will be devoted to this lesson.

Materials.—Clear white pine for the first hour, whitewood for the second hour; one-half inch thick, eight inches wide, four feet long, planed on one face and edges.

First Stage.

Measuring.

Tools, &c.—Rule, two feet long, four folds; Pencil, knife, trestles.

Description of Trestles.—The trestles are of pine, thirty inches long, eighteen inches high, and have four legs, which spread twelve inches at the base.

Forms to be Produced.—A series of thirty-six marks or dots, one inch apart, commencing at the right-hand end.

Placing Trestles.—Place the trestles at right angles to the direction of the length of the bench at a little less distance apart than the length of the board, opposite the middle of the bench, and with a space between the trestles and front of the bench of about eighteen inches.

Placing Board.—Rest the board on the trestles with its length in the same direction as the bench, and just beyond those legs of the trestles which are nearest the bench. The framing edge is placed farthest from the bench. Mark it with a cross.

Note.—The tried or framing edge, which is the edge to be worked from, is to be selected by the pupil with reference to the straightness and quality of the piece.

Attitude.—Stand squarely on both feet at one side of the board, facing it at right angles to its length, at the end nearest the vise, and with the back to the bench. Have the left foot a little advanced, so that the body may be thrown forward and backward with perfect freedom and ease. Keep the back straight, and bend at the hips.

NOTE.—An important purpose of this lesson is to enable the pupil to acquire an easy and correct movement; he should watch the others, and imitate the best.

Retaining Work.—The weight of the work will keep it in place.

Holding Rule.—In the attitude directed, open the rule its full length.

Placing the Rule.—Place the graduated edge of the rule upon the framing edge of the board and its end even with that end of the board which is nearest the vise. Have it lie parallel to the framing edge, and about half an inch from it. Hold it in this position with the left hand until twenty-four marks have been made; then move it to the left one foot, and retain it in that position until the thirty-six marks required have all been made.

Marking.—With the pencil in the right hand, mark the points upon the board (a dot is enough), opposite the inch divisions on the rule. Then remove the rule from the work, fold it up, and lay it upon the bench.

NOTE.—All marking during the first hour is to be executed with the pencil. All marking during the second hour is to be executed with the knife.

SECOND STAGE.

Lining with Try-square.

Tools, etc.—Try-square, marking instruments (pencil, knife), trestles.

Description of the Tools.—The try-square has two parts; viz., head and tongue. The head is made of wood, faced with brass. The tongue is of steel, and fixed at an angle of ninety degrees with the head. Both parts have inside and outside edges.

Forms to be Produced.—Draw thirty-six lines parallel to each other through the thirty-six marks, and at right angles to the length of the board, by means of the square and marking instrument.

Preparations for Work.—The preparations for work—placing trestles, placing board, attitude, and retaining work—will be the same as in *measuring.*

Holding Square.—Grasp the square by the head with the left hand, the palm pressing the outside edge and the thumb on the inner edge of the blade.

Holding Marking Instrument.—Hold it in the right hand in any convenient manner for use.

Placing Square.—With the square in the hand as described, place the inner edge of its head firmly against the framing edge of the board, with the outer edge of the tongue against the marking instrument, which is held at one of the points already determined by measurement. Hold the square so that the tongue shall lie flat on the top of the piece and point towards the pupil. The thumb may rest partly upon the inner edge of the square and partly upon the board; this will help the student to feel it if the square slips.

Marking.—Hold the marking instrument against the outside edge of the tongue, touching the board at any convenient inclination; draw it steadily across the work once, without changing its inclination.

NOTE.—In this stage, during the first hour, the marking instrument will be the pencil; during the second hour, the knife or the scriber. Once marking or lining is usually sufficient, though it is quite customary, when lining with a knife, to repeat the marking. When properly done, *i. e.*, cut deep enough the first time, no repetition is required.

THIRD STAGE.

Cross-cut Sawing on Trestles.

Tools, &c.—Cross-cut saw; trestles.

Description of the Saw.—The saw consists of two parts, blade and handle. The edge of the blade on which the teeth are cut is called the front edge or breast; the other the back. The end of the blade farthest from the handle is called the point; the opposite end the heel.

Forms to be Produced.—Thirty-six pieces, one inch wide, of a length equal to the width of the board, and having the lines upon them by which the saw was guided.

Preparations for Work.—Placing trestles, placing board, and attitude, will be the same as in *Measuring.*

Retaining the Board while Sawing it.—With the left hand grasp the framing edge of the board in such a place as will bring the end of the thumb when extended even with the line farthest to the right, at the same time pressing down on the board with the palm of the hand to hold it firmly in place on the trestles.

Holding Saw.—Take the saw by the handle (with the teeth pointing down) with the right hand, inserting the second, third, and fourth fingers through the opening made for that purpose. Close the hand, with the forefinger extended along the side of the handle to assist in steadying the saw.

NOTE.—The hand will then assume nearly the position that it has when one is pointing with the forefinger.

Placing the Saw.—Place the middle of the cutting edge of the saw at the line on the framing edge of the board, the blade resting gently against the thumb of the left hand; hold the saw in a vertical position when viewed from above, and at any convenient angle with the top of the board when viewed from the side.

Commencement of Sawing; Drawing Stroke.—Without bearing on the saw, draw it several inches towards the shoulder in a straight line. This will have started the cutting, and the saw will now be kept from moving sideways by the kerf it has cut.

Pushing Stroke.—With very slight pressure, reverse the motion just completed, moving the saw its full length now, back and forth continually, guiding the saw to the line drawn.

Watching the Saw.—To guide the saw correctly, the eye must watch closely its path, to check its *first* disposition to depart from the line. It should view the saw from a position vertically above its edge. If viewed from a position considerably to the right or left, the hand is liable to lean *from* the eye, and thence to incline the saw sideways.

Correction of Deviations from the Line.—The correction, of the deviation of the saw from the line, is to be made by twisting the blade in the kerf;

inasmuch as the back edge of the saw is somewhat thinner than the cutting edge, the blade can thus be twisted in the kerf, and the true line returned to.

Caution.—The pupil is cautioned not to press hard upon the saw, for by so doing he will be more liable to deviate from the line, to leave his work less smooth, and to injure the saw.

Finishing.—On approaching completion, the position of both the left hand and the body may require changing, as both pieces of the wood are to be kept free from splinters and perfect every way. When the saw is well advanced through the work, place the left knee upon the nearest edge of the board to hold it against the trestles, partially relieving the left hand from this duty. Move this hand from its original position along the edge, and grasp the board on both sides of the kerf, to support the end projecting beyond the trestle, and also to press the board against the knee; while in this position the sawing may be completed and the piece removed. It should not be allowed to fall upon the floor.

NOTE.—Near the end of the cut the strokes should be carefully made to avoid splintering; to do this, saw lightly and somewhat quicker.

Percentage of Marks.—

1.	Sawing to line without removing any of it, . . .	45	per cent.
2.	Corners not splintered in finishing sawing, . . .	25	"
3.	Corners not injured in starting sawing, ...	20	"
4.	Number of pieces sawn off, ...	10	"
		100	"

23 CHURCH STREET, BOSTON, MASS., December, 1877.

The Association believe that the course of instruction which they are giving is excellent enough to be made a part of the public instruction. They have made request of the School Committee of Boston, that they will visit the school, examine the work now progressing, and, if it commends itself sufficiently to their judgment, that they will adopt it, or some other, having the same principles in view.

While the Association has not, this winter, continued to give instruction in the use of carving-tools, that work has been carried on by an independent organization. It was known last spring that several sets of people were anxious to have a day school for carving established in the city. The society voted to confer with the others interested. These conferences were followed by the establishment, also, at 23 Church Street, of a day school of carving and modelling under the auspices of the Woman's Educational Association, which now gives instruction in modelling, casting, and carving for five hours a day for five days in the week during eight months of the year. The projected course will require two years for its completion. The Russian system is followed in this school.

AN ABSTRACT

OF THE SCHOOL RETURNS MADE BY THE SCHOOL COMMITTEES OF THE SEVERAL TOWNS AND CITIES IN THE COMMONWEALTH, FOR THE SCHOOL YEAR 1876-1877.

BARNSTABLE COUNTY.

TOWNS.	Population—State Census, 1875.	Valuation—1876.	No. of Schools.	Amount expended in 1876 for erecting School-houses.	Amount expended in 1876 for repairing School-houses.	No. of different Scholars in Public Schools during the school year.	Avg. attendance in all the Pub. Schools during the school year.	Persons under 5 years of age who attend the Public Schools.	Persons over 15 years of age who attend the Public Schools.	No. in the State between 5 and 15 years of age, May 1, 1876.	No. of different persons employed as Teachers in Pub. Sch'ls. Males.	No. of different persons employed as Teachers in Pub. Sch'ls. Fem.	No. of Teachers from Normal Schools.	Agg'te length of Public Schools for the year, in months and days.
Barnstable,	4,302	$2,429,610 00	25	–	$1,112 46	908	635	8	114	776	6	25	7	212
Brewster,	1,219	612,667 00	7	–	435 65	233	198	–	43	220	2	6	2	51
Chatham,	2,274	737,029 00	14	$1,368 91	360 00	551	359	10	65	488	3	15	2	118–10
Dennis,	3,369	1,700,857 00	13	–	814 17	706	545	–	190	628	6	10	2	107–10
Eastham,	639	188,714 00	4	–	67 00	155	116	1	31	139	1	4	–	33
Falmouth,	2,211	2,189,595 00	14	–	327 00	403	286	6	66	338	7	17	5	116–5
Harwich,	3,355	1,037,210 00	15	–	–	814	529	8	134	692	8	13	–	112–10
Mashpee,	278	114,264 00	2	–	–	66	21	–	10	68	2	2	–	15–10
Orleans,	1,373	415,855 00	8	–	500 00	270	190	2	63	225	1	9	–	72
Provincetown,	4,357	1,943,574 00	15	–	307 97	917	752	–	122	787	3	16	3	135–3
Sandwich,	3,417	1,408,200 00	22	–	305 19	765	540	10	133	621	6	27	1	177–15
Truro,	1,098	277,495 00	7	–	344 01	241	185	3	33	187	3	8	–	54–10
Wellfleet,	1,988	890,683 00	11	–	400 00	381	295	–	83	410	3	10	–	92
Yarmouth,	2,264	1,362,289 00	10	–	198 35	368	275	1	32	351	5	9	3	90
Total,	32,144	$15,308,042 00	167	$1,368 91	$5,171 80	6,778	4,926	49	1,119	5,930	56	171	25	8

BERKSHIRE COUNTY.

TOWNS.	Population—State Census, 1875.	Valuation—1876.	No. of Schools.	Amount expended in 1876 for erecting School-houses.	Amount expended in 1876 for repairing School-houses.	No. of different Scholars in Public Schools during the school year.	Avg. attendance in all the Pub. Schools during the school year.	Persons under 5 years of age who attend the Public Schools.	Persons over 15 years of age who attend the Public Schools.	No. in the State between 5 and 15 years of age, May 1, 1876.	Males.	Fem.	No. of Teachers from Normal Schools.	Agg'te length of Public Schools for the year, in months and days.
Adams,	15,760	$6,347,234 00	47	–	–	3,374	1,921	6	203	3,171	8	55	15	431–10
Alford,	389	255,798 00	3	–	–	68	44	3	10	55	1	4	–	23–5

Becket,	1,329	$471,359 00	11	–	–	340	231	5	44	316	3	17	3	66–15
Cheshire,	1,693	825,032 00	10	–	$86 88	376	266	9	43	355	2	8	1	85
Clarksburg,	670	232,549 00	3	–	19 51	179	93	1	28	169	2	3	4	22–10
Dalton,	1,759	1,272,676 00	9	–	91 58	371	267	10	35	284	–	13	2	70–10
Egremont,	890	522,322 00	6	–	203 00	141	84	4	24	145	3	6	–	43–6
Florida,	572	171,866 00	6	–	–	141	94	5	8	110	–	8	1	36
Gt. Barrington,	4,385	3,218,860 00	21	–	50 00	859	669	12	125	893	4	21	5	177
Hancock,	730	469,432 00	7	–	600 00	140	100	6	20	120	2	5	2	46
Hinsdale,	1,571	761,520 00	9	–	50 00	402	244	16	25	325	1	10	2	70–4
Lanesborough,	1,357	665,227 00	8	–	14 00	314	202	9	30	268	1	9	2	49–10
Lee,	3,900	1,934,447 00	18	–	1,000 00	776	661	6	20	833	5	17	2	154
Lenox,	1,845	1,272,663 00	11	–	500 00	414	317	10	24	404	4	11	1	85
Monterey,	703	250,775 00	8	–	–	179	99	5	8	163	–	10	–	53–10
Mt. Washington,	177	75,455 00	2	–	7 00	33	14	–	1	43	1	3	–	14–11
New Ashford,	160	95,105 00	2	–	–	66	28	1	11	32	2	2	–	14–10
New Marlboro',	2,037	680,161 00	15	–	25 00	513	327	10	46	439	3	15	–	104–15
Otis,	855	259,738 00	10	–	47 60	220	159	7	30	204	3	12	–	60
Peru,	443	158,566 00	5	–	9 25	106	67	2	16	104	2	8	1	30
Pittsfield,	12,267	8,177,606 00	41	$16,306 06	961 15	2,451	1,676	25	204	2,558	3	67	2	365–15
Richmond,	1,141	571,981 00	6	–	34 00	209	143	8	7	248	1	5	–	44–10
Sandisfield,	1,172	447,654 00	12	375 00	40 00	221	157	7	37	215	6	14	–	84–6
Savoy,	730	225,255 00	8	–	150 00	144	121	8	28	129	3	15	2	48
Sheffield,	2,233	1,108,780 00	13	650 00	100 00	583	285	6	76	468	4	20	5	105
Stockbridge,	2,089	2,350,909 00	8	–	45 00	381	334	14	55	365	1	11	3	73
Tyringham,	517	272,865 00	5	2,250 00	–	139	77	3	23	112	2	6	1	31–5
Washington,	603	239,193 00	6	–	136 23	149	88	5	12	135	2	9	1	40–17
W. Stockbridge,	1,981	908,741 00	9	–	40 00	430	315	9	47	423	4	8	1	73–10
Williamstown,	3,683	1,749,040 00	14	–	300 00	740	400	9	54	724	2	19	4	131–10
Windsor,	624	240,315 00	8	–	38 77	126	90	4	22	103	2	11	5	49
Total,	68,265	$36,233,124 00	341	$19,581 06	$4,548 97	14,585	9,573	225	1,316	13,913	77	422	65	7–17

BARNSTABLE COUNTY—CONTINUED.

TOWNS.	Average length as returned by Committee.	No. of Schools kept less than six months.	Average wages of Teachers per month, including the value of board. Males.	Females.	Raised by taxes for Schools, including wages of Teachers, board, fuel, care of fires and school-rooms, for the school year 1876-77.	Amount of board, fuel, etc., voluntarily contributed for Public Schools.	Expenses of superintendence by School Committee, including the salary of Superintendent.	Expenses of printing Reports, etc.	Salary of Superintendent of Public Schools.	Am't of School Funds, the income of which can be appropriated only for the support of Academies and Schools.	Income from local School Funds.	Income of Funds, appropriated to Public Schools at the option of the town, including tax on Dogs.
Barnstable, .	8–10	–	$67 50	$37 20	$9,500 00	–	$231 50	$30 00	–	$1,800 00	$50 00	$268 88
Brewster, . .	7–10	1	64 00	36 00	2,200 00	–	100 00	35 00	–	–	–	52 42
Chatham, . .	8–9	1	78 67	23 17	4,500 00	–	175 00	36 00	$175 00	–	–	56 24
Dennis, . .	8–7	–	63 00	32 50	5,500 00	–	175 00	23 00	100 00	–	–	21 69
Eastham, . .	8–5	–	43 75	32 19	981 00	–	35 00	7 50	–	–	–	–
Falmouth, . .	8–18	–	50 50	37 88	4,500 00	–	228 68	50 00	–	10,000 00	700 00	168 98
Harwich, . .	7–10	–	53 25	31 23	5,000 00	–	125 00	35 00	–	–	–	112 95
Mashpee, . .	6–15	–	39 00	26 00	500 00	–	30 00	10 00	–	–	–	–
Orleans, . .	9	–	105 27	22 86	2,500 00	–	110 00	40 00	100 00	–	–	21 69
Provincetown, .	9–4	–	98 33	30 56	7,600 00	$21 00	343 75	50 00	–	–	–	–
Sandwich, . .	8–2	–	54 17	32 00	8,350 00	100 00	350 00	45 50	350 00	3,500 00	200 00	222 54
Truro, . .	7–5	–	60 00	25 50	1,650 00	–	122 00	22 00	–	–	–	–
Wellfleet, . .	8–7	–	67 66	29 00	5,000 00	–	–	25 00	–	–	–	–
Yarmouth, . .	9	–	75 00	38 12	4,250 00	–	135 00	25 00	–	15,000 00	900 00	84 96
Total, . .	–	2	$65 72	$31 01	$62,031 00	$121 00	$2,160 93	$434 00	$725 00	$30,300 00	$1,850 00	$1,010 35

BERKSHIRE COUNTY—CONTINUED.

TOWNS.	Average length as returned by Committee.	No. of Schools kept less than six months.	Males.	Females.	Raised by taxes for Schools.	Amount of board, fuel, etc.	Expenses of superintendence.	Expenses of printing Reports, etc.	Salary of Superintendent.	Am't of School Funds.	Income from local School Funds.	Income of Funds, including tax on Dogs.
Adams, . .	9–13	–	$92 61	$39 06	$27,000 00	–	$300 00	$151 00	–	–	–	–
Alford, . .	7–15	–	30 00	22 00	400 00	–	20 00	6 00	–	–	–	–

Becket, . .	6	-	$34 33	$20 40	$1,500 00	$130 00	$38 00	$9 25	-	$190 00	$9 50	$114 00
Cheshire, . .	8–10	-	58 00	30 00	3,200 00	-	92 62	5 00	-	-	-	96 71
Clarksburg, .	7–10	-	34 80	36 80	700 00	-	23 22	14 00	-	-	-	-
Dalton, . .	8–10	1	-	37 92	3,000 00	-	90 00	15 00	-	-	-	-
Egremont, . .	7–13	1	29 00	27 00	1,000 00	63 00	42 75	-	-	-	-	64 47
Florida, . .	6	-	-	23 00	600 00	-	6 00	14 00	-	200 00	12 00	39 58
Gt. Barrington, .	8	-	67 00	32 00	7,500 00	-	150 00	45 00	-	960 71	57 64	290 13
Hancock, . .	6–11	-	30 00	22 00	628 50	-	21 00	4 00	-	200 00	12 00	44 00
Hinsdale, . .	7–16	-	58 00	28 04	2,400 00	-	25 00	10 00	-	-	14 82	-
Lanesborough, .	7–4	-	24 00	23 00	1,500 00	-	50 00	7 00	-	175 00	57 44	-
Lee, . . .	8–12	1	80 00	34 00	7,100 00	50 00	187 50	15 00	-	1,600 00	96 00	-
Lenox, . .	8	-	44 00	32 00	3,700 00	200 00	150 00	6 00	-	-	-	-
Monterey, . .	6–13	-	-	26 33	800 00	-	-	5 00	-	1,785 71	104 00	60 41
Mt. Washington,	7–6	-	15 00	24 50	225 00	-	18 00	8 00	-	-	-	-
New Ashford, .	7–5	-	31 25	20 00	96 00	-	15 00	10 00	-	-	-	20 37
New Marlboro', .	6–19	-	37 11	18 80	2,000 00	124 73	115 02	15 00	-	5,458 77	327 52	197 22
Otis, . . .	6	-	27 00	20 00	1,100 00	27 00	80 70	10 00	-	-	-	84 78
Peru, . . .	6	1	20 66	21 11	500 00	-	25 00	7 00	-	370 50	22 23	29 63
Pittsfield, . .	9	-	136 29	32 80	23,000 00	-	734 53	80 00	-	-	-	-
Richmond, . .	7–3	-	28 00	23 20	800 00	40 00	10 00	11 00	-	-	-	81 48
Sandisfield, .	7–1	-	36 00	22 00	1,500 00	173 00	57 35	7 00	-	1,290 00	77 40	82 72
Savoy, . .	6	-	32 00	20 00	600 00	150 00	25 00	5 00	-	1,297 00	77 00	-
Sheffield, . .	8–7	-	37 62	26 60	3,100 00	14 00	110 00	-	-	1,600 00	96 00	364 87
Stockbridge, .	9–3	-	148 72	42 38	4,500 00	-	237 00	20 00	-	3,500 00	350 00	-
Tyringham, .	6–5	-	42 00	24 00	600 00	106 00	30 00	6 00	-	-	-	52 00
Washington, .	6–17	-	24 00	20 54	800 00	-	37 00	7 00	-	-	-	61 32
W. Stockbridge,	8–10	-	48 33	32 00	2,500 00	-	123 97	17 50	-	-	-	-
Williamstown, .	8–16	1	40 00	33 00	5,200 00	-	80 00	15 00	-	-	-	-
Windsor, . .	6–4	1	22 50	18 00	800 00	64 00	26 75	7 00	-	587 66	35 26	45 00
Total, . .	-	6	$46 72	$26 85	$108,349 50	1,141 73	$2,921 41	$531 75	-	$19,215 35	$1,348 81	$1,728 69

BARNSTABLE COUNTY—CONCLUDED.

TOWNS.	HIGH SCHOOLS.							INCORP. ACADEMIES.			UNINCOR. ACADEMIES AND PRIVATE SCHOOLS.			Town's share of School Fund, payable January 25, 1877.	How much of said Fund was used for apparatus and books of reference.
	Number.	No. of Teachers.	No. of Scholars.	How supported.	LENGTH.		Salary of Principal.	Number.	Average No. of Scholars.	Aggregate paid for Tuition.	Number.	Average No. of Scholars.	Aggregate paid for Tuition.		
					Months.	Days.									
Barnstable, . .	1	2	51	Taxation,	9		$900 00	–	–	–	–	–	–	$268 11	$9 00
Brewster, . .	–	–	–	–	–		–	–	–	–	–	–	–	236 25	–
Chatham, . .	1	1	45	Taxation,	9–10		810 00	–	–	–	–	–	–	265 88	–
Dennis, . .	1	2	61	Taxation,	9		630 00	–	–	–	–	–	–	249 83	–
Eastham, . .	–	–	–	–	–		–	–	–	–	–	–	–	219 35	–
Falmouth, . .	1	2	30	In part Tax,	9		800 00	1	29	$360 00	–	–	–	198 82	–
Harwich, . .	1	1	69	Taxation,	7–10		445 00	–	–	–	2	50	$65 00	248 90	–
Mashpee, . .	–	–	–	–	–		–	–	–	–	–	–	–	211 83	–
Orleans, . .	1	1	51	Taxation,	9–10		1,000 00	–	–	–	–	–	–	236 09	–
Provincetown, .	1	2	46	Taxation,	10		1,200 00	–	–	–	1	12	60 00	288 21	78 00
Sandwich, . .	1	2	63	Taxation,	10		1,200 00	–	–	–	–	–	–	252 44	–
Truro, . .	–	–	–	–	–		–	–	–	–	–	–	–	226 41	–
Wellfleet, . .	1	1	42	Taxation,	10		1,000 00	–	–	–	–	–	–	260 35	–
Yarmouth, . .	1	1	21	In part Tax,	9		1,050 00	–	–	–	2	23	400 00	200 98	–
Total, . .	10	15	479	–	–		$9,035 00	1	29	$360 00	5	85	$525 55	$3,361 45	$87 00

BERKSHIRE COUNTY—CONCLUDED.

TOWNS.	Number.	No. of Teachers.	No. of Scholars.	How supported.	Months.	Days.	Salary of Principal.	Number.	Average No. of Scholars.	Aggregate paid for Tuition.	Number.	Average No. of Scholars.	Aggregate paid for Tuition.	Town's share of School Fund, payable January 25, 1877.	How much of said Fund was used for apparatus and books of reference.
Adams, . .	2	5	120	Taxation,	9–15		$3,200 00*	–	–	–	–	–	–	$510 13	–
Alford, . .	–	–	–	–	–		–	–	–	–	–	–	–	208 60	–

Becket, . .	–	–	–	–	–	–	–	–	–	–	–	–	$247 75	–
Cheshire, . .	–	–	–	–	–	–	–	–	–	–	–	–	256 36	–
Clarksburg, .	–	–	–	–	–	–	–	–	–	–	–	–	223 95	$20 00
Dalton, . .	–	–	–	–	–	–	–	–	–	–	–	–	201 29	45 08
Egremont, . .	–	–	–	–	–	–	–	–	–	1	30	$180 00	219 81	–
Florida, . .	–	–	–	–	–	–	–	–	–	–	–	–	367 65†	–
Gt. Barrington, .	1	3	60	Taxation,	10	$1,583 33	–	–	–	1	20	600 00	233 75	–
Hancock, . .	–	–	–	–	–	–	–	–	–	–	–	–	216 42	–
Hinsdale, . .	1	1	37	Taxation,	6–4	359 00	–	–	–	–	–	–	253 75	–
Lanesborough, .	–	–	–	–	–	–	–	–	–	1	4	160 00	247 60	–
Lee, . . .	2	3	100	Taxation,	{ 10 4 }	1,500 00	–	–	–	2	40	400 00	274 70	–
Lenox, . .	1	1	51	Taxation,	10	1,200 00	–	–	–	1	30	500 00	208 97	–
Monterey, . .	–	–	–	–	–	–	–	–	–	1	18	200 00	224 41	31 45
Mt. Washington,	–	–	–	–	–	–	–	–	–	–	–	–	207 83	–
New Ashford, .	–	–	–	–	–	–	–	–	–	–	–	–	205 83	–
New Marlboro', .	–	–	–	–	–	–	1	20	$600 00	–	–	–	259 89	–
Otis, . . .	–	–	–	–	–	–	–	–	–	–	–	–	227 32	4 48
Peru, . . .	–	–	–	–	–	–	–	–	–	–	–	–	215 96	–
Pittsfield, . .	1	3	90	Taxation,	8–15	1,700 00	–	–	–	4	175	7,500 00	366 11	–
Richmond, . .	–	–	–	–	–	–	–	–	–	1	13	75 00	236 40	–
Sandisfield, .	–	–	–	–	–	–	–	–	–	–	–	–	234 86	–
Savoy, . .	–	–	–	–	–	–	–	–	–	–	–	–	218 58	–
Sheffield, . .	1	1	58	Taxation,	9	684 00	–	–	–	–	–	–	221 70	64 98
Stockbridge, .	1	2	61	Taxation,	9–15	1,450 00	–	–	–	3	17	2,000 00	203 60	–
Tyringham, .	–	–	–	–	–	–	–	–	–	–	–	–	217 20	–
Washington, .	–	–	–	–	–	–	–	–	–	–	–	–	225 18	15 18
W. Stockbridge,	–	–	–	–	–	–	–	–	–	1	30	120 00	265 89	–
Williamstown, .	1	1	54	Taxation,	9	516 00	–	–	–	2	110	12,540 00	260 10	–
Windsor, . .	–	–	–	–	–	–	–	–	–	–	–	–	213 51	–
Total, . .	11	20	631	–	–	$12,192 33	1	20	$600 00	18	487	$24,275 00	$7,675 10	$181 17

$1,600 each.

† Includes $150 for Hoosac Tunnel School.

BRISTOL COUNTY.

TOWNS.	Population—State Census, 1875.	Valuation—1876.	No. of Schools.	Amount expended in 1876 for erecting School-houses.	Amount expended in 1876 for repairing School-houses.	No. of different Scholars in Public Schools during the school year.	Avg. attendance in all the Pub. Schools during the school year.	Persons under 5 years of age who attend the Public Schools.	Persons over 15 years of age who attend the Public Schools.	No. in the State between 5 and 15 years of age, May 1, 1876.	No. of different persons employed as Teachers in Pub. Sch'ls.		No. of Teachers from Normal Schools.	Agg'te length of Public Schools for the year, in months and days.
											Males.	Fem.		
Acushnet, . .	1,059	$565,550 00	6	–	$738 00	210	144	1	19	192	4	9	8	54–10
Attleborough, .	9,224	4,464,917 00	33	–	300 00	1,819	1,118	21	161	1,508	7	42	6	314–12
Berkley, . .	781	294,863 00	6	–	–	129	100	3	19	118	1	6	2	41–10
Dartmouth, .	3,434	1,721,850 00	19	$1,924 80	271 12	523	390	14	71	517	6	23	3	143–10
Dighton, . .	1,755	739,485 00	9	–	242 08	424	261	7	61	295	2	14	4	67–15
Easton, . .	3,898	2,319,133 00	19	–	149 47	963	597	19	113	793	2	24	8	156
Fairhaven, . .	2,768	1,400,500 00	11	–	700 00	531	397	7	74	460	1	16	5	96
Fall River, . .	45,340	48,920,485 00	103	31,954 02	6,012 71	8,814	4,843	–	348	8,509	10	113	17	978–10
Freetown, . .	1,396	635,135 00	8	–	286 52	257	160	9	44	252	1	11	3	64–5
Mansfield, . .	2,656	1,081,189 00	12	–	3,000 00	464	367	5	48	481	1	14	1	80
New Bedford, .	25,876	26,750,202 00	69	15,000 00	3,893 50	3,925	3,175	–	321	4,002	7	103	15	690
Norton, . .	1,595	754,255 00	8	–	73 22	287	182	5	32	252	6	6	1	54
Raynham, . .	1,687	988,280 00	9	–	180 00	325	236	10	23	307	–	11	6	72
Rehoboth, . .	1,827	784,007 00	15	–	670 00	388	245	17	45	326	3	18	–	105
Seekonk, . .	1,167	698,456 00	8	–	53 74	212	163	9	20	192	–	12	1	61
Somerset, . .	1,940	1,041,823 00	7	–	–	386	276	4	29	390	1	10	4	52–10
Swansea, . .	1,308	642,025 00	10	500 00	140 00	255	179	6	32	208	1	15	3	79–18
Taunton, . .	20,429	16,890,271 00	62	–	3,000 00	3,579	2,649	–	232	3,632	8	67	6	620
Westport, . .	2,912	1,439,600 00	21	1,155 00	312 00	695	503	21	78	554	6	20	4	133
Total, . .	131,052	$112,132,026 00	435	$50,533 82	$20,022 36	24,186	15,985	158	1,770	22,988	67	534	97	8–18

DUKES COUNTY.

Chilmark, . .	508	$258,972 00	4	–	–	95	67	2	17	81	1	4	–	24
Edgartown, .	1,707	2,225,650 00	9	–	$440 00	330	269	1	23	355	2	10	1	69
Gay Head, . .	216	10,460 00	1	–	–	32	25	2	–	37	–	1	–	6
Gosnold, . .	115	181,750 00	1	–	–	17	11	1	4	23	–	2	–	9
Tisbury, . .	1,525	702,745 00	9	–	165 58	254	200	–	50	222	4	10	1	54
Total, . .	4,071	$3,379,577 00	24	–	$605 58	728	572	6	94	718	7	27	2	6–15

BRISTOL COUNTY—CONTINUED.

TOWNS.	Average length as returned by Committee.	No. of Schools kept less than six months.	Average wages of Teachers per month, including the value of board.		Raised by taxes for Schools, including wages of Teachers, board, fuel, care of fires and schoolrooms, for the school year 1876-77.	Amount of board, fuel, etc., voluntarily contributed for Public Schools.	Expenses of superintendence by School Committee, including the salary of Superintendent.	Expenses of printing Reports, etc.	Salary of Superintendent of Public Schools.	Am't of School Funds, the income of which can be appropriated only for the support of Academies and Schools.	Income from local School Funds.	Income of Funds, appropriated to Public Schools at the option of the town, including tax on Dogs.
			Males.	Females.								
Acushnet, . .	9	–	$50 00	$31 00	$1,800 00	–	$90 00	$20 00	–	–	–	$107 00
Attleborough, .	9–10	–	66 30	39 00	15,000 00	$130 00	700 00	50 00	–	$15,900 00	$1,080 00	800 00
Berkley, . .	6–19	1	48 00	28 00	1,000 00	6 00	50 00	20 00	–	–	–	96 00
Dartmouth, .	7–4	–	38 05	26 21	4,500 00	–	136 75	48 00	–	–	–	338 08
Dighton, . .	7–15	–	40 00	36 40	2,500 00	–	148 03	17 00	–	–	–	180 92
Easton, . .	8–5	–	82 60	35 33	7,000 00	40 00	180 17	60 00	–	–	–	459 98
Fairhaven, . .	8–15	–	138 00	33 70	5,614 00	–	150 00	–	–	–	–	152 62
Fall River, . .	9–10	–	157 60	52 30	97,000 00	–	2,360 00	180 04	$2,100 00	–	–	–
Freetown, . .	3	–	49 25	28 26	1,800 00	–	100 00	5 00	–	–	–	–
Mansfield, . .	7–6	–	80 00	32 00	4,500 00	–	150 00	30 00	150 00	700 00	51 00	–
New Bedford, .	10	–	182 71	65 00	68,762 06	–	2,775 00	312 00	2,225 00	50,000 00	3,000 00	751 45
Norton, . .	7–15	–	36 66	33 60	1,800 00	–	95 00	–	–	–	–	470 37
Raynham, . .	8	–	–	35 11	2,500 00	–	115 00	20 00	100 00	–	–	230 95
Rehoboth, . .	7	–	37 11	34 40	3,200 00	–	85 00	25 00	–	2,800 00	168 00	294 00
Seekonk, . .	7–13	1	–	30 00	2,000 00	–	86 00	14 00	–	–	–	–
Somerset, . .	7–10	–	50 00	37 00	2,700 00	–	95 00	13 00	–	–	–	–
Swansea, . .	8	–	43 00	30 76	2,475 98	–	65 00	17 75	65 00	–	–	–
Taunton, . .	10	–	104 00	43 25	42,550 00	–	2,000 00	150 50	2,000 00	8,500 00	850 00	–
Westport, . .	7	1	39 66	25 88	3,500 00	–	180 00	30 00	–	–	–	568 14
Total, . .	–	3	$73 11	$35 64	$270,202 04	$176 00	$9,560 95	$1,012 29	$6,640 00	$77,900 00	$5,149 00	$4,449 51

DUKES COUNTY—CONTINUED.

Chilmark, . .	6	–	$40 00	$27 43	$400 00	–	$46 00	$6 75	–	–	–	–
Edgartown, .	7–14	1	60 00	27 20	3,500 00	–	225 00	64 50	–	–	–	$78 24
Gay Head, . .	6	–	–	22 75	–	–	–	5 88	–	$114 02	–	–
Gosnold, . .	9	–	–	26 00	225 00	–	–	2 50	–	–	–	–
Tisbury, . .	6	–	46 25	30 00	2,000 00	–	80 75	40 00	–	–	–	
Total, . .	–	1	$48 75	$26 67	$6,125 00	–	$351 75	$119 63	–	$114 02	–	$78 24

BRISTOL COUNTY—CONCLUDED.

TOWNS.	HIGH SCHOOLS.							INCORP. ACADEMIES.			UNINCOR. ACADEMIES AND PRIVATE SCHOOLS.			Town's share of School Fund, payable January 25, 1877.	How much of said Fund was used for apparatus and books of reference.
	Number.	No. of Teachers.	No. of Scholars.	How supported.	LENGTH.		Salary of Principal.	Number.	Average No. of Scholars.	Aggregate paid for Tuition.	Number.	Average No. of Scholars.	Aggregate paid for Tuition.		
					Months.	Days.									
Acushnet, . .	–	–	–	–	–		–	–	–	–	–	–	–	$229 18	–
Attleborough, .	2	6	136	Taxation,	10		$1,200 00	–	–	–	2	40	$430 00	330 49	$50 00
Berkley, . .	–	–	–	–	–		–	–	–	–	–	–	–	222 26	–
Dartmouth, .	1	1	38	Taxation,	9		573 33	–	–	–	2	26	58 00	227 85	–
Dighton, . .	–	–	–	–	–		–	–	–	–	–	–	–	248 98	–
Easton, . .	1	1	60	Taxation,	9		1,200 00	–	–	–	–	–	–	271 48	5 00
Fairhaven, . .	1	3	121	Taxation,	10		1,380 00	–	–	–	–	–	–	206 06	–
Fall River, . .	1	6	296	Taxation,	9–15		2,800 00	–	–	–	5	850	3,000 00	–	–
Freetown, . .	–	–	–	–	–		–	–	–	–	–	–	–	234 25	–
Mansfield, . .	1	1	48	Taxation,	9		720 00	–	–	–	–	–	–	225 25	50 00
New Bedford, .	1	10	315	Taxation,	10		2,000 00	1	56	$5,800 00	18	212	4,700 00	–	–
Norton, . .	–	–	–	–	–		–	1	132	20,680 89	–	–	–	243 47	–
Raynham, . .	–	–	–	–	–		–	–	–	–	–	–	–	249 44	45 00
Rehoboth, . .	–	–	–	–	–		–	–	–	–	–	–	–	249 74	–
Seekonk, . .	–	–	–	–	–		–	–	–	–	–	–	–	231 79	–
Somerset, . .	–	–	–	–	–		–	–	–	–	–	–	–	210 14	–
Swansea, . .	–	–	–	–	–		–	–	–	–	–	–	–	235 32	–
Taunton, . .	1	4	206	Taxation,	10		1,600 00	1	70	2,600 00	2	123	900 00	–	–
Westport, . .	1	1	60	Taxation,	9		700 00	–	–	–	11	193	288 00	231 07	–
Total, . .	10	33	1,280	–	–		$12,173 33	3	258	$29,080 89	40	1,444	$9,376 00	$3,846 67	$150 00

DUKES COUNTY—Concluded.

Chilmark, . .	-	-	-	-	-	-	-	-	-	-	-	-	$213 05	-
Edgartown, .	1	2	48	Taxation,	9	$675 00	-	-	-	-	-	-	205 28	$50 00
Gay Head, . .	-	-	-	-	-	-	-	-	-	-	-	-	204 61	-
Gosnold, . .	-	-	-	-	-	-	-	-	-	-	-	-	202 92	-
Tisbury, . .	-	-	-	-	-	-	1	38	$128 00	2	55	$65 00	234 73	35 00
Total, . .	1	2	48	-	-	$675 00	1	38	$128 00	2	55	$65 00	$1,060 59	$85 00

ESSEX COUNTY.

TOWNS.	Population—State Census, 1875.	Valuation—1876.	No. of Schools.	Amount expended in 1876 for erecting School-houses.	Amount expended in 1876 for repairing School-houses.	No. of different Scholars in Public Schools during the school year.	Avg. attendance in all the Pub. Schools during the school year.	Persons under 5 years of age who attend the Public Schools.	Persons over 15 years of age who attend the Public Schools.	No. in the State between 5 and 15 years of age, May 1, 1876.	No. of different persons employed as Teachers in Pub. Sch'ls.		No. of Teachers from Normal Schools.	Agg'te length of Public Schools for the year, in months and days.
											Males.	Fem.		
Amesbury, . .	5,987	$1,317,352 00	18	–	$150 00	697	566	15	90	637	4	15	3	143–10
Andover, . .	5,097	3,008,481 00	20	–	1,797 60	923	690	15	82	867	2	29	3	171
Beverly, . .	7,263	8,565,480 00	26	–	684 00	1,333	1,029	–	89	1,332	2	32	2	260
Boxford, . .	834	588,830 00	5	–	20 00	140	92	4	32	111	2	8	–	42–10
Bradford, . .	2,347	1,267,776 00	8	–	420 00	365	284	–	52	378	2	10	–	78
Danvers, . .	6,024	3,525,900 00	20	–	1,400 00	1,151	901	4	87	1,117	4	32	5	181
Essex, . .	1,713	848,717 00	10	–	100 00	335	252	11	87	338	2	9	5	85
Georgetown, .	2,214	1,145,265 00	10	–	150 00	412	108	15	20	365	1	10	2	90
Gloucester, .	16,754	9,380,948 00	33	–	37,980 21	4,202	2,994	–	382	3,691	5	93	15	301–15
Groveland, . .	2,084	837,899 00	6	–	100 00	366	282	12	26	336	1	5	–	54
Hamilton, . .	797	568,780 00	4	–	108 95	158	106	1	24	141	4	4	3	30–5
Haverhill, . .	14,628	10,324,238 00	56	–	1,666 97	2,804	2,075	14	268	2,608	6	60	6	560
Ipswich, . .	3,674	1,883,694 00	13	–	–	549	470	6	77	551	6	17	4	137–3
Lawrence, . .	34,907	23,903,598 00	50	$18,896 68	5,596 38	4,759	3,516	24	236	5,634	7	102	–	550
Lynn, . . .	32,600	25,937,431 00	62	3,000 00	8,549 58	5,544	4,264	–	348	5,924	7	110	40	623–2
Lynnfield, . .	769	591,509 00	4	–	41 00	154	106	1	16	122	–	6	4	34–15
Manchester, .	1,560	1,792,610 00	8	–	75 00	292	227	–	32	263	1	9	2	72–5
Marblehead, .	7,677	3,945,295 00	19	–	112 95	1,571	1,174	–	95	1,564	2	25	7	194–15
Merrimac, . .	–	1,027,800 00	11	–	136 95	335	305	7	42	326	3	10	3	97
Methuen, . .	4,205	2,310,770 00	16	–	780 20	731	498	5	71	668	7	18	1	139–10
Middleton, . .	1,092	501,790 00	5	–	–	220	143	5	43	185	2	5	5	45
Nahant, . .	766	6,080,805 00	3	–	191 59	107	76	–	17	84	1	2	3	30
Newbury, . .	1,426	901,060 00	7	–	100 00	227	155	9	7	225	–	8	–	61–7

Newburyport, . .	13,323	$7,725,617 00	22	–	$550 00	2,415	1,665	–	151	2,505	7	40	–	236
North Andover, .	2,981	2,095,494 00	14	–	618 11	638	404	2	46	527	3	16	3	120–7
Peabody, . .	8,066	6,151,950 00	21	–	475 00	1,450	1,102	1	105	1,419	4	36	17	215–5
Rockport, . .	4,490	2,023,227 00	12	–	672 41	683	602	–	102	793	1	17	4	81–10
Rowley, . .	1,162	511,485 00	5	–	38 60	207	132	4	23	205	1	5	1	43–15
Salem, . .	25,955	26,044,532 00	76	–	4,923 06	4,247	2,938	–	320	4,430	8	78	53	761
Salisbury, . .	4,078	1,791,373 00	18	–	188 00	773	537	5	81	678	4	16	1	155–5
Saugus, . .	2,578	1,698,428 00	11	–	200 00	448	377	–	34	465	1	14	6	104–10
Swampscott, .	2,128	2,469,423 00	10	$3,395 36	213 78	400	291	–	32	356	1	13	7	104–10
Topsfield, . .	1,221	764,031 00	5	–	140 00	185	133	7	18	220	–	5	1	39
Wenham, . .	911	529,600 00	5	–	–	167	140	–	13	155	–	7	2	42
West Newbury, .	2,021	1,036,455 00	11	–	130 70	405	298	5	42	371	3	10	2	88
Total, . .	223,332	$163,097,643 00	624	$25,292 04	$68,311 04	39,393	28,932	172	3,190	39,591	104	876	210	9–11

ESSEX COUNTY—CONTINUED.

TOWNS.	Average length as returned by Committee.	No. of Schools kept less than six months.	Average wages of Teachers per month, including the value of board.		Raised by taxes for Schools, including wages of Teachers, board, fuel, care of fires and school-rooms, for the school year 1876-77.	Amount of board, fuel, etc., voluntarily contributed for Public Schools.	Expenses of superintendence by School Committee, including the salary of Superintendent.	Expenses of printing Reports, etc.	Salary of Superintendent of Public Schools.	Am't of School Funds, the income of which can be appropriated only for the support of Academies and Schools.	Income from local School Funds.	Income of Funds, appropriated to Public Schools at the option of the town, including tax on Dogs.
			Males.	Females.								
Amesbury, . .	8	–	$85 24	$28 87	$6,200 00	–	$150 00	$47 00	–	–	–	–
Andover, . .	9	–	40 00	40 90	9,500 00	–	450 00	78 00	–	$171,205 00	$12,128 00	–
Beverly, . .	10	–	130 00	37 28	17,000 00	–	284 00	68 00	–	3,000 00	180 00	$277 12
Boxford, . .	8–10	–	40 00	32 00	1,000 00	–	75 00	25 00	–	2,700 00	160 00	204 38
Bradford, . .	9–15	–	153 84	40 59	5,500 00	–	140 00	23 00	–	200,000 00	12,000 00	–
Danvers, . .	9–5	–	120 00	35 00	11,200 00	–	500 00	75 00	–	–	–	312 00
Essex, . .	8–10	–	50 00	24 77	2,500 00	–	180 00	32 00	–	–	–	–
Georgetown, .	9	–	111 11	38 70	4,500 00	–	280 00	40 00	–	–	–	171 00
Gloucester, .	9–4	3	124 00	39 00	40,720 00	–	2,500 00	315 00	$2,500 00	–	–	725 11
Groveland, . .	9	–	98 89	40 00	3,000 00	–	100 00	25 00	–	–	–	–
Hamilton, . .	7–12	–	55 00	25 75	1,000 00	–	45 00	12 87	–	–	–	82 54
Haverhill, . .	10	–	132 85	55 40	45,000 00	–	1,128 50	174 80	–	–	–	430 00
Ipswich, . .	10–3	–	70 00	32 85	6,000 00	–	150 00	30 00	–	28,378 75	2,509 08	254 13
Lawrence, . .	10	–	166 00	44 36	62,000 00	–	2,500 00	233 75	2,500 00	–	–	–
Lynn, . . .	10–1	–	170 75	54 31	81,066 26	–	840 40	400 00	–	–	–	–
Lynnfield, . .	8–11	–	–	35 00	1,000 00	–	68 00	22 83	–	–	–	76 82
Manchester, .	9	–	78 94	29 85	2,800 00	–	180 00	48 00	–	–	–	–
Marblehead, .	10–5	–	126 36	39 25	13,500 00	$200 00	–	125 00	–	8,000 00	600 00	481 42
Merrimac, . .	8–16	–	100 00	30 00	4,800 00	–	150 00	15 00	–	–	–	–
Methuen, . .	8–14	–	64 25	38 01	7,000 00	–	218 32	40 00	–	–	–	–
Middleton, . .	9	–	46 00	32 00	1,400 00	–	85 00	18 00	–	–	–	118 92
Nahant, . .	10	–	150 00	60 00	3,500 00	–	150 00	86 50	–	–	–	–
Newbury, . .	8–15	–	–	29 75	1,700 00	–	52 00	30 00	–	20,000 00	1,100 00	98 92

Newburyport, .	10–15	–	$115 00	$38 00	$28,368 78	–	$200 00	$128 00	–	$15,000 00	$900 00	$620 60
North Andover, .	9–7	–	86 00	40 16	8,000 00	–	300 00	42 00	–	–	–	–
Peabody, . .	10–5	–	146 34	42 09	22,525 00	–	376 00	85 00	–	6,000 00	420 00	835 36
Rockport, . .	7	–	60 00	50 76	4,580 00	–	230 00	41 00	–	–	–	–
Rowley, . .	8–15	–	50 00	26 00	1,600 00	–	77 50	23 50	–	–	–	99 45
Salem, . .	10–15	–	148 00	47 00	71,030 73	–	2,500 00	390 23	$2,500 00	5,425 00	285 50	1,529 34
Salisbury, . .	8–13	–	78 00	31 00	7,000 00	–	300 00	40 00	–	–	–	186 57
Saugus, . .	9–10	–	94 00	36 63	6,000 00	–	145 00	85 00	–	–	–	–
Swampscott, .	10–10	–	114 29	45 02	7,800 00	–	170 00	56 00	–	–	–	–
Topsfield, . .	7–16	–	–	36 60	1,200 00	–	40 00	25 00	40 00	–	–	121 01
Wenham, . .	8–7	–	–	32 60	1,250 00	–	87 00	16 00	–	–	–	75 00
West Newbury, .	8	–	51 25	30 00	3,707 76	–	188 48	35 00	–	–	–	–
Total, . .	–	3	$98 58	$37 70	$494,948 53	$200 00	$14,840 20	$2,931 48	$7,545 00	$459,708 75	$30,282 58	$6,699 69

ESSEX COUNTY—CONCLUDED.

TOWNS.	HIGH SCHOOLS.							INCORP. ACADEMIES.			UNINCOR. ACADEMIES AND PRIVATE SCHOOLS.			Town's share of School Fund, payable January 25, 1877.	How much of said Fund was used for apparatus and books of reference.
	Number.	No. of Teachers.	No. of Scholars.	How supported.	LENGTH.		Salary of Principal.	Number.	Average No. of Scholars.	Aggregate paid for Tuition.	Number.	Average No. of Scholars.	Aggregate paid for Tuition.		
					Months.	Days.									
Amesbury, . .	2	3	79	Taxation,	9	10	$1,873 00	–	–	–	1	30	$30 00	$327 20	–
Andover, . .	1	3	88	In part Tax,	9	10	2,000 00	2	261	$16,308 00	1	16	210 00	237 75	–
Beverly, . .	1	3	109	Taxation,	10		1,200 00	–	–	–	1	30	300 00	222 22	–
Boxford, . .	–	–	–	–	–		–	–	–	–	1	4	1,200 00	219 50	$5 00
Bradford, . .	1	2	64	Taxation,	9	15	1,500 00	1	116	8,598 66	–	–	–	212 64	–
Danvers, . .	1	2	65	Taxation,	10		1,600 00	–	–	–	2	36	300 00	277 05	–
Essex, . .	–	–	–	–	–		–	–	–	–	1	20	150 00	251 28	–
Georgetown, .	1	2	72	Taxation,	9		1,000 00	–	–	–	–	–	–	204 67	–
Gloucester, .	1	6	254	Taxation,	10		2,000 00	–	–	–	2	63	710 00	525 94	87 00
Groveland, . .	1	1	55	Taxation,	9		818 00	–	–	–	–	–	–	257 73	–
Hamilton, . .	–	–	–	–	–		–	–	–	–	–	–	–	220 72	–
Haverhill, . .	1	8	176	Taxation,	10		2,000 00	–	–	–	2	60	800 00	–	–
Ipswich, . .	1	2	63	Taxation,	10	11	1,500 00	–	–	–	–	–	–	228 15	–
Lawrence, . .	1	9	278	Taxation,	10		2,500 00	–	–	–	2	1,200	–	–	–
Lynn, . . .	1	5	230	Taxation,	10	10	2,300 00	–	–	–	6	112	3,250 00	–	–
Lynnfield, . .	–	–	–	–	–		–	–	–	–	–	–	–	219 49	–
Manchester, .	1	1	46	Taxation,	9	15	770 00	–	–	–	–	–	–	190 23	45 00
Marblehead, .	1	2	80	Taxation,	10	5	1,404 39	–	–	–	2	50	205 00	337 23	–
Merrimac, . .	2	2	71	Taxation,	9	10	1,000 00	–	–	–	–	–	–	–	–
Methuen, . .	1	2	49	Taxation,	9		1,000 00	–	–	–	1	6	100 00	259 76	–
Middleton, . .	–	–	–	–	–		–	–	–	–	–	–	–	234 84	–
Nahant, . .	1	1	27	Taxation,	10		1,500 00	–	–	–	–	–	–	12 44	–
Newbury, . .	–	–	–	–	–		–	–	–	–	1	28	300 00	234 56	–

Newburyport, .	1	5	221	*	10–15	$1,900 00	1	83	–	4	110	$13 00	$399 70	–
North Andover, .	1	2	47	Taxation,	9–15	1,000 00	–	–	–	1	7	100 00	231 26	–
Peabody, . .	1	3	78	Taxation,	10–5	1,700 00	–	–	–	2	35	700 00	221 73	–
Rockport, . .	1	2	33	Taxation,	9	600 00	–	–	–	1	17	136 00	267 19	–
Rowley, . .	–	–	–	–	–	–	–	–	–	–	–	–	231 18	–
Salem, . .	1	8	251	Taxation,	10–2	3,000 00	–	–	–	20	725	10,844 00	-	–
Salisbury, . .	1	2	65	Taxation,	10	1,000 00	–	–	–	2	30	30 00	254 71	–
Saugus, . .	1	2	44	Taxation,	9–10	893 00	–	–	–	–	–	–	220 31	$25 00
Swampscott, .	1	1	36	Taxation,	10	650 00	–	–	–	–	–	–	–	25 00
Topsfield, . .	–	–	–	–	–	–	–	–	–	–	–	–	236 09	–
Wenham, . .	–	–	–	–	–	–	–	–	–	–	–	–	225 49	–
West Newbury, .	1	1	37	Taxation,	8	500 00	–	–	–	–	–	–	211 88	15 00
Total, . .	28	80	2,618	–	–	$37,208 39	4	460	$24,906 66	53	2,579	$19,378 00	$7,172 94	$202 00

* By Tax and Fund.

FRANKLIN COUNTY.

TOWNS.	Population—State Census, 1875.	Valuation—1876.	No. of Schools.	Amount expended in 1876 for erecting School-houses.	Amount expended in 1876 for repairing School-houses.	No. of different Scholars in Public Schools during the school year.	Avg. attendance in all the Pub. Schools during the school year.	Persons under 5 years of age who attend the Public Schools.	Persons over 15 years of age who attend the Public Schools.	No. in the State between 5 and 15 years of age, May 1, 1876.	No. of different persons employed as Teachers in Pub. Sch'ls.		No. of Teachers from Normal Schools.	Agg'te length of Public Schools for the year, in months and days.
											Males.	Fem.		
Ashfield,	1,190	$513,782 00	14	–	–	267	169	6	59	222	1	22	2	86–2
Bernardston,	991	405,393 00	6	–	–	166	119	1	9	156	1	9	–	41–10
Buckland,	1,921	589,338 00	10	$1,412 54	$239 28	474	326	9	24	421	1	13	1	67–17
Charlemont,	1,029	347,765 00	8	–	41 59	207	135	4	46	157	2	14	2	49
Coleraine,	1,699	622,779 00	15	–	20 38	396	265	8	55	325	2	23	1	98–3
Conway,	1,452	738,190 00	12	–	58 32	326	194	10	40	282	–	14	3	80–15
Deerfield,	3,414	1,318,848 00	19	–	656 20	677	513	2	69	571	4	31	4	139–3
Erving,	794	301,295 00	6	–	–	186	117	5	27	146	1	8	1	46–11
Gill,	673	466,031 00	6	–	55 00	122	95	2	20	111	–	11	–	37–10
Greenfield,	3,540	2,758,320 00	17	–	333 22	594	472	2	76	598	3	22	2	148–3
Hawley,	588	154,019 00	8	–	–	178	136	1	18	124	3	11	–	48
Heath,	545	188,234 00	8	–	25 00	145	110	6	36	110	4	9	1	48
Leverett,	831	313,185 00	6	–	–	170	120	9	28	121	–	10	2	37–18
Leyden,	524	204,113 00	5	–	–	121	77	3	12	112	5	5	–	31
Monroe,	190	46,798 00	3	–	–	57	42	3	4	48	–	5	–	18
Montague,	3,380	2,075,420 00	17	–	149 66	650	488	14	75	616	3	21	4	128–10
New Salem,	923	326,550 00	7	–	25 00	176	124	5	19	157	1	10	–	42
Northfield,	1,641	695,521 00	11	–	–	274	220	2	24	265	3	14	–	71
Orange,	2,497	1,405,085 00	16	–	224 01	455	337	13	64	397	3	17	3	106–10
Rowe,	661	181,305 00	7	–	16 00	148	101	–	30	118	3	9	2	42
Shelburne,	1,590	838,603 00	11	–	3,552 67	384	255	–	119	249	2	18	–	87–15
Shutesbury,	558	178,435 00	7	–	–	134	88	6	11	107	1	13	1	42
Sunderland,	860	392,040 00	6	–	51 00	198	159	10	26	166	–	10	1	45–10

Warwick, . .	744	$261,585 00	8	–	–	135	99	6	24	120	–	11	3	47–15
Wendell, . .	503	172,782 00	4	–	–	94	58	4	3	81	–	8	1	25–10
Whately, . .	958	698,208 00	6	–	$20 00	192	135	5	7	212	–	8	–	51
Total, . .	33,696	$16,193,624 00	243	$1,412 54	$5,467 33	6,926	4,954	136	925	5,992	43	346	34	6–17

HAMPDEN COUNTY.

Agawam, . .	2,248	$1,167,699 00	10	–	$27 72	434	256	9	39	368	–	14	3	75–10
Blandford, . .	964	392,102 00	12	–	–	221	150	18	40	178	5	18	2	75
Brimfield, . .	1,201	519,450 00	9	–	83 00	257	147	7	15	215	1	13	3	62
Chester, . .	1,396	486,457 00	12	–	–	337	213	4	53	255	4	14	1	72
Chicopee, . .	10,331	4,972,818 00	24	$1,600 00	542 71	1,385	1,103	19	125	1,970	5	29	11	226
Granville, . .	1,240	405,416 00	12	–	50 00	299	208	19	33	279	1	17	3	80–10
Holland, . .	334	130,356 00	4	–	–	71	45	–	11	62	2	5	–	24
Holyoke, . .	16,260	9,637,992 00	33	–	1,500 00	1,959	1,141	8	131	2,983	5	41	7	327–10
Longmeadow, .	1,467	1,025,120 00	11	–	1,735 88	253	188	5	24	252	3	15	2	92–10
Ludlow, . .	1,222	548,436 00	8	–	30 00	230	144	6	37	215	3	11	1	56–10
Monson, . .	3,733	1,363,598 00	17	–	279 42	618	372	14	49	632	5	23	–	127–10
Montgomery, .	304	140,054 00	5	–	–	62	45	1	3	58	–	6	2	30
Palmer, . .	4,572	1,915,887 00	19	–	757 55	1,030	593	7	68	902	3	22	–	176
Russell, . .	638	414,964 00	5	–	31 88	111	87	4	6	111	2	6	2	31–10
Southwick, . .	1,114	591,691 00	10	–	111 00	256	138	10	57	193	3	14	4	75–1
Springfield, .	31,053	35,109,457 00	95	–	3,167 60	5,890	4,183	19	505	5,408	10	110	21	950
Tolland, . .	452	241,880 00	7	550 00	–	77	49	2	13	82	1	8	–	35
Wales, . .	1,020	435,523 00	6	–	11 01	175	116	6	10	142	–	9	–	42
Westfield, . .	8,429	7,544,369 00	30	–	832 00	1,708	1,149	36	155	1,399	5	47	40	274
West Springfield,	3,739	2,755,669 00	17	–	1,517 90	812	498	5	66	674	3	24	8	152–15
Wilbraham, .	2,576	934,570 00	13	–	–	369	282	12	39	409	5	16	4	104
Total, . .	94,293	$70,733,508 00	359	$2,150 00	$10,677 67	16,554	11,107	211	1,479	16,787	66	462	114	8–12

FRANKLIN COUNTY—CONTINUED.

TOWNS.	Average length as returned by Committee.	No. of Schools kept less than six months.	Average wages of Teachers per month, including the value of board.		Raised by taxes for Schools, including wages of Teachers, board, fuel, care of fires and school-rooms, for the school year 1876-77.	Amount of board, fuel, etc., voluntarily contributed for Public Schools.	Expenses of superintendence by School Committee, including the salary of Superintendent.	Expenses of printing Reports, etc.	Salary of Superintendent of Public Schools.	Am't of School Funds, the income of which can be appropriated only for the support of Academies and Schools.	Income from local School Funds.	Income of Funds, appropriated to Public Schools at the option of the town, including tax on Dogs.
			Males.	Females.								
Ashfield, . .	6–3	–	$28 00	$25 69	$1,750 00	$533 50	$90 00	$18 00	–	$900 00	$54 00	$50 00
Bernardston, .	6–18	–	48 00	31 72	1,000 00	–	85 00	12 00	–	10,716 67	1,250 00	–
Buckland, . .	7–18	–	40 00	28 91	2,000 00	–	140 00	23 00	–	914 83	54 89	114 00
Charlemont, .	6–3	–	39 83	26 93	1,500 00	–	65 48	20 00	–	800 00	48 00	70 50
Coleraine, . .	6–17	–	28 00	22 74	2,000 00	287 18	125 75	14 20	–	–	–	–
Conway, . .	6–15	–	–	29 75	2,700 00	60 00	91 56	15 70	–	–	–	–
Deerfield, . .	7–6	–	46 50	35 96	5,445 00	–	400 63	–	–	15,000 00	1,000 00	208 00
Erving, . .	7–15	–	40 00	29 00	1,200 00	–	69 31	19 00	–	900 00	–	72 35
Gill, . . .	6–13	–	–	30 75	800 00	243 76	42 00	6 00	–	–	–	–
Greenfield, . .	8–14	–	97 22	37 74	10,000 00	–	347 50	18 80	–	–	–	441 45
Hawley, . .	6	–	27 81	20 54	1,132 90	–	64 78	6 00	–	400 00	24 00	–
Heath, . .	6	–	35 75	18 50	1,000 00	15 00	50 00	10 00	$50 00	–	–	–
Leverett, . .	6–6	–	–	24 71	828 06	–	52 49	6 50	–	–	–	47 04
Leyden, . .	6–4	–	28 40	19 40	700 00	–	33 25	7 00	–	–	–	–
Monroe, . .	6	–	–	19 47	200 00	–	24 75	6 75	24 75	–	–	–
Montague, . .	7–11	–	58 96	36 31	6,000 00	–	300 00	15 00	–	–	–	–
New Salem, .	6	–	15 00	24 66	1,000 00	23 00	41 25	12 35	–	15,000 00	750 00	35 60
Northfield, . .	6–9	1	37 33	30 00	2,500 00	–	80 00	14 00	–	400 00	24 00	189 80
Orange, . .	6–13	–	55 70	26 94	3,900 00	68 25	234 20	37 50	–	–	–	–
Rowe, . .	6	1	28 33	19 50	700 00	–	37 00	11 00	–	200 00	12 00	41 81
Shelburne, .	7–18	–	80 00	31 00	3,500 00	–	69 00	45 00	–	–	–	311 46
Shutesbury, .	6	–	28 00	22 17	800 00	–	50 00	16 00	–	267 33	16 00	22 30
Sunderland, .	7–11	1	–	32 00	1,500 00	–	75 00	10 00	–	–	–	23 00

Warwick,	5–19	–	–	$23 92	$1,000 00	$10 00	$10 00	$18 70	–	$500 00	$30 00	–
Wendell,	6–8	–	–	27 96	700 00	–	111 51	6 00	–	540 00	39 44	$42 53
Whately,	8–10	–	–	27 51	1,400 00	–	60 00	–	–	–	–	–
Total,	–	3	$42 38	$27 06	$55,255 96	$1,240 69	$2,750 46	$368 50	$74 75	$46,538 83	$3,302 33	$1,669 84

HAMPDEN COUNTY—Continued.

Agawam,	8–2	–	–	$39 14	$3,000 00	$20 00	$108 75	$10 00	–	–	–	$209 00
Blandford,	6–5	–	$26 34	23 81	1,200 00	7 00	40 00	10 00	–	$2,500 00	$150 00	304 00
Brimfield,	7–10	–	30 00	29 80	1,800 00	–	84 00	18 00	–	67,000 00	4,100 00	–
Chester,	6	–	31 46	23 43	1,600 00	–	118 40	8 00	–	–	–	95 89
Chicopee,	9–9	–	134 50	39 45	20,500 00	–	600 00	50 00	–	–	–	–
Granville,	6–14	–	36 00	32 00	1,800 00	36 00	40 00	12 00	–	–	–	139 02
Holland,	6	–	22 50	21 50	350 00	–	23 00	4 50	–	222 22	13 33	37 96
Holyoke,	9–19	–	96 80	42 51	21,200 00	–	1,600 00	31 50	$1,600 00	–	–	–
Longmeadow,	8–8	1	36 00	34 40	3,583 28	–	129 25	–	–	731 00	49 67	192 70
Ludlow,	7	–	30 00	28 00	1,800 00	–	95 00	10 00	–	–	–	–
Monson,	7–10	–	32 73	30 67	4,800 00	–	237 04	41 50	–	25,500 00	2,000 00	303 70
Montgomery,	6	–	–	23 00	500 00	30 00	22 00	7 00	–	–	–	44 12
Palmer,	9–5	–	74 11	32 51	7,500 00	–	402 95	–	–	850 00	54 32	325 75
Russell,	6–6	–	24 00	25 00	800 00	–	13 00	–	–	–	–	61 00
Southwick,	7–10	–	37 50	28 47	1,000 00	–	109 00	12 25	–	15,618 01	1,089 25	143 64
Springfield,	10	–	169 00	50 50	108,000 00	–	3,425 00	75 00	3,425 00	–	–	–
Tolland,	5	4	28 00	21 21	500 00	149 00	20 00	4 00	–	–	–	59 50
Wales,	7	–	–	22 67	800 00	–	68 55	18 00	–	–	–	97 47
Westfield,	9–3	–	135 76	39 76	19,800 00	51 00	500 00	75 00	–	53,000 00	3,180 00	734 62
WestSpringfield,	9	–	100 00	39 09	8,195 59	48 00	173 00	25 75	–	14,647 54	866 00	–
Wilbraham,	8	–	31 18	31 18	3,100 00	–	212 00	25 00	–	1,705 00	102 31	191 42
Total,	–	5	$59 77	$31 34	$211,828 87	$341 00	$8,020 94	$437 50	$5,025 00	$181,773 77	$11,604 88	$2,939 79

FRANKLIN COUNTY—CONCLUDED.

TOWNS.	HIGH SCHOOLS.							INCORP. ACADEMIES.			UNINCOR. ACADEMIES AND PRIVATE SCHOOLS.			Town's share of School Fund, payable January 25, 1877.	How much of said Fund was used for apparatus and books of reference.
	Number.	No. of Teachers.	No. of Scholars.	How supported.	LENGTH.		Salary of Principal.	Number.	Average No. of Scholars.	Aggregate paid for Tuition.	Number.	Average No. of Scholars.	Aggregate paid for Tuition.		
					Months.	Days.									
Ashfield,	–	–	–	–	–		–	1	35	$180 00	–	–	–	$236 54	$10 00
Bernardston,	1	2	68	Tax in part,	8–10		$1,000 00	–	–	–	–	–	–	223 65	–
Buckland,	–	–	–	–	–		–	–	–	–	–	–	–	258 97	20 06
Charlemont,	–	–	–	–	–		–	–	–	–	–	–	–	223 49	–
Coleraine,	–	–	–	–	–		–	–	–	–	1	20	$60 00	250 37	–
Conway,	1	2	55	Taxation,	8–10		493 00	–	–	–	1	4	72 00	242 38	–
Deerfield,	2	3	43	One by Tax, One in part,	9 8–10		618 00 516 00	–	–	–	–	–	–	248 77	–
Erving,	–	–	–	–	–		–	–	–	–	1	24	30 00	222 88	9 50
Gill,	–	–	–	–	–		–	–	–	–	1	22	44 00	215 20	–
Greenfield,	1	3	79	Taxation,	9		1,300 00	–	–	–	2	52	1,530 00	256 56	49 89
Hawley,	–	–	–	–	–		–	–	–	–	–	–	–	222 63	–
Heath,	–	–	–	–	–		–	–	–	–	1	27	94 00	217 81	7 88
Leverett,	–	–	–	–	–		–	–	–	–	–	–	–	219 18	–
Leyden,	–	–	–	–	–		–	–	–	–	–	–	–	214 59	10 80
Monroe,	–	–	–	–	–		–	–	–	–	–	–	–	206 30	–
Montague,	1	1	40	Taxation,	9		600 00	–	–	–	–	–	–	239 96	35 80
New Salem,	–	–	–	–	–		–	1	69	750 00	–	–	–	221 35	–
Northfield,	–	–	–	–	–		–	–	–	–	–	–	–	248 98	–
Orange,	1	1	41	Taxation,	9		1,000 00	–	–	–	2	50	400 00	210 18	54 60
Rowe,	–	–	–	–	–		–	–	–	–	1	10	67 00	222 02	–
Shelburne,	1	2	66	In part Tax,	9		720 00	–	–	–	1	86	125 00	238 41	–
Shutesbury,	–	–	–	–	–		–	–	–	–	–	–	–	216 11	–
Sunderland,	–	–	–	–	–		–	–	–	–	–	–	–	224 88	9 00

Warwick, . .	–	–	–	–	–	–	–	–	–	–	–	–	$220 11	$16 80
Wendell, . .	–	–	–	–	–	–	–	–	–	–	–	–	212 43	–
Whately, . .	–	–	–	–	–	–	–	–	–	1	22	$130 00	229 32	–
Total, . .	8	14	392	–	–	$6,247 00	2	104	$930 00	12	317	$2,552 00	$5,943 07	$224 33

HAMPDEN COUNTY—Concluded.

Agawam, . .	–	–	–	–	–	–	–	–	–	–	–	–	$209 29	–
Blandford, . .	–	–	–	–	–	–	–	–	–	–	–	–	226 85	–
Brimfield, . .	1	4	140	Not by Tax'n,	10	$1,500 00	–	–	–	–	–	–	233 47	$21 60
Chester, . . .	–	–	–	–	–	–	–	–	–	3	80	$250 00	239 78	–
Chicopee, . .	2	5	125	Taxation,	10 10	1,840 00 1,380 00	–	–	–	1	600	–	485 87	121 49
Granville, . .	–	–	–	–	–	–	–	–	–	1	9	–	243 16	–
Holland, . .	–	–	–	–	–	–	–	–	–	–	–	–	209 22	–
Holyoke, . .	1	3	94	Taxation,	9–19	1,600 00	–	–	–	4	1,130	5,300 00	496 16	–
Longmeadow, .	–	–	–	–	–	–	–	–	–	–	–	–	191 01	–
Ludlow, . .	–	–	–	–	–	–	–	–	–	–	–	–	234 55	–
Monson, . .	1	3	67	Taxation,	10	1,500 00	1	135	$2,050 00	2	35	500 00	249 67	–
Montgomery, .	–	–	–	–	–	–	1	–	–	–	–	–	209 22	–
Palmer, . .	1	1	57	Taxation,	10–10	987 00	–	–	–	–	–	–	294 65	–
Russell, . .	–	–	–	–	–	–	–	–	–	–	–	–	217 65	–
Southwick, .	–	–	–	–	–	–	–	–	–	–	–	–	226 56	–
Springfield, . .	1	9	345	Taxation,	10	2,700 00	–	–	–	7	175	8,000 00	–	–
Tolland, . .	–	–	–	–	–	–	–	–	–	–	–	–	213 36	–
Wales, . .	–	–	–	–	–	–	–	–	–	–	–	–	224 88	–
Westfield, . .	1	5	182	Taxation,	10	1,900 00	–	–	–	1	25	375 00	196 10	–
West Springfield,	1	1	49	Taxation,	10	1,000 00	–	–	–	–	–	–	275 00	68 75
Wilbraham, .	–	–	–	–	–	–	1	630	9,000 00	–	–	–	–	–
Total, . .	9	31	1,059	–	–	$14,407 00	2	765	$11,050 00	19	2,054	$14,425 00	$4,876 45	$211 84

HAMPSHIRE COUNTY.

TOWNS.	Population—State Census, 1875.	Valuation—1876.	No. of Schools.	Amount expended in 1876 for erecting School-houses.	Amount expended in 1876 for repairing School-houses.	No. of different Scholars in Public Schools during the school year.	Avg. attendance in all the Pub. Schools during the school year.	Persons under 5 years of age who attend the Public Schools.	Persons over 15 years of age who attend the Public Schools.	No. in the State between 5 and 15 years of age, May 1, 1876.	No. of different persons employed as Teachers in Pub. Sch'ls.		No. of Teachers from Normal Schools.	Agg'te length of Public Schools for the year, in months and days.
											Males.	Fem.		
Amherst, . .	3,937	$2,542,653 00	18	–	$140 00	639	546	1	93	641	2	27	1	138–5
Belchertown, .	2,315	981,098 00	18	–	378 30	572	362	16	90	450	9	22	4	135–10
Chesterfield, .	746	301,472 00	9	–	–	141	107	7	15	147	1	14	–	57–5
Cummington, .	916	436,494 00	10	–	–	202	152	7	49	156	1	12	2	61–10
Easthampton, .	3,964	2,274,449 00	16	–	529 02	631	513	5	72	637	–	21	5	142
Enfield, . .	1,065	661,030 00	8	–	79 19	184	156	–	11	183	1	12	1	49
Goshen, . .	349	149,039 00	4	–	12 29	92	56	3	18	67	2	5	2	25–10
Granby, . .	812	510,370 00	9	–	30 00	157	127	5	13	141	1	11	3	62–15
Greenwich, .	606	277,922 00	6	–	282 40	91	85	2	27	78	2	9	2	36
Hadley, . .	2,125	1,421,925 00	13	–	161 31	479	326	15	22	423	–	19	4	97–5
Hatfield, . .	1,600	1,106,279 00	7	–	10 00	314	205	5	14	313	–	12	–	61–5
Huntington, .	1,095	510,295 00	7	–	21 08	221	139	4	15	194	–	9	2	56
Middlefield, .	603	349,920 00	8	–	10 00	189	129	6	27	143	5	11	2	50–5
Northampton, .	11,108	7,645,300 00	50	$2,559 46	2,084 10	2,397	1,581	20	239	2,127	5	62	16	461
Pelham, . .	633	166,294 00	4	–	8 98	140	78	3	26	116	2	7	2	30
Plainfield, . .	481	176,060 00	6	–	–	108	69	2	19	73	2	8	1	36
Prescott, . .	493	200,173 00	5	–	–	118	75	6	15	101	4	7	–	30
South Hadley, .	3,370	1,776,160 00	13	–	485 00	759	513	4	58	618	4	18	2	117–5
Southampton, .	1,050	492,251 00	8	–	–	203	133	4	18	190	–	12	2	59–3
Ware, . . .	4,142	1,652,940 00	20	–	689 02	889	587	4	55	950	6	21	–	144–17
Westhampton, .	556	273,090 00	5	–	18 37	114	70	1	21	127	3	7	–	38–15

Williamsburg, . .	2,029	$1,144,487 00	13	–	$12 00	460	284	1	35	464	3	16	2	100–10
Worthington, . .	818	376,197 00	11	–	–	169	124	6	31	146	2	13	1	71
Total, . . .	44,813	$25,425,898 00	268	$2,559 46	$4,951 06	9,269	6,417	127	983	8,485	55	355	54	7–14

HAMPSHIRE COUNTY—Continued.

TOWNS.	Average length as returned by Committee.	No. of Schools kept less than six months.	Average wages of Teachers per month, including the value of board.		Raised by taxes for Schools, including wages of Teachers, board, fuel, care of fires and school-rooms, for the school year 1876-77.	Amount of board, fuel, etc., voluntarily contributed for Public Schools.	Expenses of superintendence by School Committee, including the salary of Superintendent.	Expenses of printing Reports, etc.	Salary of Superintendent of Public Schools.	Am't of School Funds, the income of which can be appropriated only for the support of Academies and Schools.	Income from local School Funds.	Income of Funds, appropriated to Public Schools at the option of the town, including tax on Dogs.
			Males.	Females.								
Amherst, . .	7–13	–	$33 33	$34 10	$7,261 00	$75 00	$450 00	$80 00	–	$5,000 00	$300 00	$136 97
Belchertown, .	7–5	–	42 00	26 00	3.500 00	–	216 88	30 00	–	–	–	134 97
Chesterfield, .	6–7	–	30 00	23 00	1,100 00	500 00	50 00	10 00	–	600 00	–	47 00
Cummington, .	6–17	–	44 00	20 67	1,200 00	–	69 75	22 00	–	–	–	33 91
Easthampton, .	8–17	–	–	42 46	7,000 00	–	200 00	–	–	143,000 00	8,000 00	151 99
Enfield, . .	6–3	–	40 00	25 41	1,300 00	–	60 00	3 00	–	–	–	78 46
Goshen, . .	6–8	–	24 00	22 00	350 00	211 00	30 50	7 00	–	–	–	–
Granby, . .	6–19	1	50 00	24 00	1,500 00	–	93 00	10 00	–	–	–	–
Greenwich, .	6	–	34 40	25 42	1,100 00	–	45 00	12 50	–	–	–	–
Hadley, . .	7–10	–	–	27 79	3,000 00	–	118 50	10 75	–	30,000 00	2,150 00	–
Hatfield, . .	8–15	–	–	30 50	2,000 00	–	30 00	15 00	–	36,000 00	3,500 00	86 70
Huntington, .	8	–	–	28 04	1,600 00	–	124 25	21 30	–	–	–	78 46
Middlefield, .	6–4	2	21 54	22 93	900 00	–	55 00	10 00	–	–	–	129 00
Northampton, .	9	–	113 33	35 80	25,000 00	–	1,216 66	300 00	$1,000 00	2,906 87	168 00	602 97
Pelham, . .	7–10	–	35 00	20 68	700 00	–	44 75	12 00	42 00	–	–	45 88
Plainfield, . .	6	–	22 00	20 34	500 00	–	47 00	7 00	–	–	–	15 96
Prescott, . .	6	–	29 00	23 30	400 00	–	34 50	–	–	–	–	31 04
South Hadley, .	9	–	91 00	35 00	8,500 00	–	125 00	59 00	–	2,000 00	120 00	182 00
Southampton, .	7–8	–	–	28 04	1,450 00	–	43 00	10 00	–	1,860 00	129 50	68 48
Ware, . .	7–5	1	67 72	32 21	7,000 00	–	326 03	52 00	–	–	–	173 06
Westhampton, .	7–15	–	26 00	24 00	1,000 00	–	45 00	–	–	–	–	35 90

Williamsburg, .	7–15	–	$57 11	$32 28	$2,800 00	–	$50 00	$18 00	–	$16,485 00	$1,157 00	$116 69
Worthington, .	6–9	–	35 00	27 65	800 00	$860 00	64 55	6 00	–	1,961 67	143 20	228 42
Total, . .	–	4	$44 19	$27 46	$79,961 00	$1,646 00	$3,539 37	$695 55	$1,042 00	$239,813 54	$15,867 70	$2,377 86

HAMPSHIRE COUNTY—CONCLUDED.

TOWNS.	HIGH SCHOOLS.							INCORP. ACADEMIES.			UNINCOR. ACADEMIES AND PRIVATE SCHOOLS.			Town's share of School Fund, payable January 25, 1877.	How much of said Fund was used for apparatus and books of reference.
	Number.	No. of Teachers.	No. of Scholars.	How supported.	Length. Months.	Length. Days.	Salary of Principal.	Number.	Average No. of Scholars.	Aggregate paid for Tuition.	Number.	Average No. of Scholars.	Aggregate paid for Tuition.		
Amherst,	1	3	100	In part Tax,	9		$1,133 00	–	–	–	1	35	$450 00	$253 65	–
Belchertown,	1	1	50	Taxation,	9–10		1,000 00	–	–	–	–	–	–	269 57	–
Chesterfield,	–	–	–	–	–		–	–	–	–	1	20	175 00	224 41	$23 58
Cummington,	–	–	–	–	–		–	–	–	–	–	–	–	225 18	–
Easthampton,	1	1	81	Taxation,	9–5		900 00	1	225	$13,000 00	–	–	–	282 67	54 32
Enfield,	–	–	–	–	–		–	–	–	–	–	–	–	227 78	20 16
Goshen,	–	–	–	–	–		–	–	–	–	–	–	–	210 14	–
Granby,	1	1	35	Taxation,	8		400 00	–	–	–	–	–	–	223 49	–
Greenwich,	–	–	–	–	–		–	–	–	–	–	–	–	214 59	–
Hadley,	1	2	62	Not by Tax,	10		1,000 00	1	62	–	1	12	1,500 00	216 50	–
Hatfield,	–	–	–	–	–		–	1	60	460 44	–	–	–	197 75	39 00
Huntington,	–	–	–	–	–		–	–	–	–	1	19	104 83	229 48	–
Middlefield,	–	–	–	–	–		–	–	–	–	1	31	160 00	220 57	–
Northampton,	2	2 5	17 139	Taxation, Taxation,	6–10 10		800 00 1,800 00	–	–	–	2	45	600 00	339 68	–
Pelham,	–	–	–	–	–		–	–	–	–	–	–	–	219 35	–
Plainfield,	–	–	–	–	–		–	–	–	–	–	–	–	211 51	–
Prescott,	–	–	–	–	–		–	–	–	–	–	–	–	214 59	–
South Hadley,	2	4	111	Taxation,	9–5		1,500 00 1,100 00	1	225	2,500 00	–	–	–	240 29	75 00
Southampton,	1	1	26	Taxation,	5–15		225 00	–	–	–	–	–	–	227 49	–
Ware,	1	2	73	Taxation,	9–10		1,000 00	–	–	–	–	–	–	299 90	5 60
Westhampton,	–	–	–	–	–		–	–	–	–	1	10	127 50	224 57	–

Williamsburg, .	2	3	90	Taxation,	9 7–15	$610 00 394 00	–	–	–	–	–	–	$229 70	–
Worthington, .	–	–	–	–	–	–	–	–	–	–	–	–	223 18	–
Total, . .	13	25	784	–	–	$11,862 00	4	572	$15,960 44	8	172	$3,117 33	$5,426 04	$217 66

MIDDLESEX COUNTY.

TOWNS.	Population—State Census, 1875.	Valuation—1876.	No. of Schools.	Amount expended in 1876 for erecting School-houses.	Amount expended in 1876 for repairing School-houses.	No. of different Scholars in Public Schools during the school year.	Avg. attendance in all the Pub. Schools during the school year.	Persons under 5 years of age who attend the Public Schools.	Persons over 15 years of age who attend the Public Schools.	No. in the State between 5 and 15 years of age, May 1, 1876.	No. of different persons employed as Teachers in Pub. Sch'ls. Males.	No. of different persons employed as Teachers in Pub. Sch'ls. Fem.	No. of Teachers from Normal Schools.	Agg'te length of Public Schools for the year, in months and days.
Acton, . .	1,708	$1,239,795 00	9	–	$147 32	320	241	18	90	296	–	13	1	67–15
Arlington, . .	3,906	5,786,482 00	18	–	121 60	780	709	–	71	772	4	18	4	184–10
Ashby, . .	962	489,451 00	9	–	189 01	218	196	2	80	153	4	10	2	56
Ashland, . .	2,211	1,303,955 00	12	–	152 00	430	367	9	18	406	2	12	3	93
Ayer, . . .	1,872	1,051,045 00	8	–	20 00	421	329	9	35	375	1	8	1	64–8
Bedford, . .	896	851,890 00	6	–	61 00	177	126	1	26	167	3	6	1	54
Belmont, . .	1,937	3,757,692 00	8	–	129 96	418	338	–	41	402	2	12	5	80
Billerica, . .	1,881	1,595,776 00	10	–	362 00	363	255	13	27	363	–	13	4	90–1
Boxborough, .	318	242,863 00	4	–	–	67	57	–	14	52	–	8	3	26
Burlington, .	650	494,095 00	5	–	37 70	107	65	2	13	99	1	6	–	38–1
Cambridge, .	47,838	62,636,453 00	29	–	5,324 00	9,523	6,492	–	772	8,218	14	174	75	290
Carlisle, . .	548	361,598 00	5	–	100 00	103	73	3	10	75	–	8	2	35–7
Chelmsford, .	2,372	1,438,045 00	13	–	788 11	582	379	10	76	503	1	17	10	106–3
Concord, . .	2,676	2,832,161 00	13	–	500 00	588	378	7	64	447	2	18	8	129–5
Dracut, . .	1,116	917,586 00	10	–	50 22	221	142	2	26	194	3	14	1	77–3
Dunstable, . .	452	286,282 00	5	–	–	91	55	1	27	80	–	9	2	32
Everett, . .	3,651	4,491,400 00	15	–	150 00	664	506	–	57	697	2	14	1	146
Framingham, .	5,167	4,429,640 00	23	–	600 00	1,151	796	10	120	938	2	24	18	197
Groton, . .	1,908	2,117,854 00	14	–	200 00	480	308	7	70	415	4	13	4	101
Holliston, . .	3,399	1,896,846 00	16	–	139 53	701	499	10	85	558	3	21	2	127–4
Hopkinton, .	4,503	2,171,946 00	23	–	156 69	1,180	813	15	95	1,047	2	28	4	187–15
Hudson, . .	3,493	1,757,761 00	14	–	–	793	633	7	81	748	2	20	7	116–10
Lexington, . .	2,505	2,978,233 00	11	–	706 00	512	356	3	61	499	4	15	1	110

Lincoln, . .	834	$788,790 00	5	–	–	152	98	2	21	136	–	9	1	43–10
Littleton, . .	950	702,840 00	8	–	$306 25	251	165	4	54	174	–	11	–	61
Lowell, . .	49,688	39,398,464 00	71	$14,174 94	4,902 49	7,763	5,249	10	598	7,400	13	128	50	682–17
Malden, . .	10,843	9,961,630 00	40	–	1,667 60	2,602	1,779	–	253	1,966	4	53	26	400
Marlborough, .	8,424	3,493,060 00	31	–	483 81	1,954	1,450	18	135	1,932	4	37	3	260
Maynard, . .	1,965	1,281,431 00	6	–	116 69	471	310	13	25	372	1	7	4	55–10
Medford, . .	6,627	8,737,453 00	20	5,389 00	700 00	1,250	1,000	–	117	1,205	9	24	3	200
Melrose, . .	3,990	4,666,889 00	14	–	488 96	755	689	–	104	815	1	15	5	140
Natick, . .	7,419	3,725,125 00	31	–	1,895 69	1,464	1,196	–	72	1,574	5	43	17	240–15
Newton, . .	16,105	28,200,965 00	65	–	3,995 66	3,194	2,439	35	354	2,853	9	71	25	650
North Reading, .	979	450,943 00	6	–	84 05	201	139	6	18	156	–	11	8	51
Pepperell, . .	1,927	1,269,917 00	11	–	168 61	401	257	2	62	340	5	8	2	78
Reading, . .	3,186	2,376,662 00	14	–	493 54	599	458	6	114	482	3	18	7	133
Sherborn, . .	999	906,590 00	6	–	40 00	180	115	2	6	162	–	10	–	51
Shirley, . .	1,352	796,774 00	7	–	189 34	265	143	1	57	225	5	6	2	52–5
Somerville, .	21,868	26,573,400 00	79	–	–	4,960	3,472	–	306	4,028	10	87	10	780
Stoneham, . .	4,984	3,007,522 00	19	–	218 29	1,018	723	7	118	918	2	22	8	197–10
Stow, . . .	1,022	753,884 00	6	–	–	221	159	4	49	185	3	6	1	52
Sudbury, . .	1,177	944,480 00	8	–	85 00	239	166	7	41	199	–	11	4	63–19
Tewksbury, .	1,997	824,063 00	7	–	215 83	212	144	3	16	200	–	7	3	64–15
Townsend, . .	2,196	1,021,404 00	15	450 00	150 00	480	354	8	73	384	5	17	3	90
Tyngsborough, .	665	306,021 00	8	–	13 88	149	110	10	30	109	2	11	1	50–5
Wakefield, . .	5,349	4,020,435 00	18	–	1,200 00	956	918	–	78	1,053	1	21	3	172–10
Waltham, . .	9,967	9,526,918 00	36	55,243 04	340 99	1,944	1,432	4	191	1,786	10	45	7	293–5
Watertown, .	5,099	7,766,170 00	16	–	915 36	920	740	–	106	871	6	22	1	160
Wayland, . .	1,766	1,116,626 00	10	–	175 58	318	255	4	22	304	1	13	5	78
Westford, . .	1,933	1,067,649 00	11	–	159 33	378	221	26	42	305	2	16	2	88
Weston, . .	1,282	1,629,083 00	7	–	65 00	205	163	2	38	201	1	10	3	53–18
Wilmington, .	879	540,006 00	6	–	–	171	139	3	15	166	–	7	3	43
Winchester, .	3,099	3,752,889 00	13	–	547 49	592	513	1	72	512	2	17	–	119
Woburn, . .	9,568	8,663,009 00	37	8,910 00	1,618 97	1,957	1,562	–	130	2,198	7	45	3	343
Total, . .	284,112	$283,399,941 00	911	$84,166 98	$31,173 55	56,112	40,671	307	5,276	50,715	167	1,289	369	8–19

MIDDLESEX COUNTY—CONTINUED.

TOWNS.	Average length as returned by Committee.	No. of Schools kept less than six months.	Average wages of Teachers per month, including the value of board.		Raised by taxes for Schools, including wages of Teachers, board, fuel, care of fires and schoolrooms, for the school year 1876–77.	Amount of board, fuel, etc., voluntarily contributed for Public Schools.	Expenses of superintendence by School Committee, including the salary of Superintendent.	Expenses of printing Reports, etc.	Salary of Superintendent of Public Schools.	Am't of School Funds, the income of which can be appropriated only for the support of Academies and Schools.	Income from local School Funds.	Income of Funds, appropriated to Public Schools at the option of the town, including tax on Dogs.
			Males.	Females.								
Acton, . .	7–11	1	–	$36 02	$2,500 00	–	$90 00	$40 00	$90 00	–	–	$225 72
Arlington, . .	10–5	–	$139 02	54 47	20,000 00	–	150 00	–	–	$5,384 00	$321 24	–
Ashby, . .	6–4	–	35 13	28 93	1,642 69	$35 00	75 00	12 00	75 00	–	–	113 47
Ashland, . .	7–15	–	90 00	34 00	4,400 00	–	144 00	32 00	–	–	–	–
Ayer, . . .	8	–	90 00	38 85	3,000 00	–	101 25	40 00	–	–	–	189 00
Bedford, . .	9	–	42 00	33 75	1,800 00	–	70 00	17 60	–	–	–	130 53
Belmont, . .	10	–	160 00	44 92	8,000 00	–	350 00	45 00	–	–	–	–
Billerica, . .	9	–	–	33 60	3,000 00	–	195 00	40 00	–	21,000 00	1,278 00	210 90
Boxborough, .	6–10	–	–	36 31	825 93	–	33 67	14 00	33 67	–	–	62 13
Burlington, .	7–13	1	56 00	28 00	1,000 00	–	60 00	13 00	–	–	–	92 16
Cambridge, .	10	–	249 76	72 63	175,615 48	–	3,325 00	400 00	3,000 00	10,000 00	920 51	–
Carlisle, . .	7–1	–	–	30 00	800 00	–	80 00	21 00	–	600 00	30 00	91 77
Chelmsford, .	8	–	90 00	40 25	5,000 00	–	260 00	65 00	225 00	–	–	285 57
Concord, . .	9–19	–	145 00	44 33	8,554 04	–	200 00	50 00	200 00	1,300 00	95 00	–
Dracut, . .	7–14	–	31 00	31 00	2,400 00	–	150 00	35 20	–	–	–	180 85
Dunstable, . .	6–8	–	–	27 00	800 00	–	21 00	13 00	–	–	–	–
Everett, . .	10–5	–	120 00	46 00	11,000 00	–	150 00	–	–	–	–	–
Framingham, .	8–9	–	142 50	47 12	13,750 00	–	700 00	100 00	700 00	1,258 94	75 54	801 60
Groton, . .	7–4	–	46 66	36 77	5,000 00	–	265 00	51 00	–	37,620 00	2,627 20	–
Holliston, . .	7–5	–	74 00	34 75	6,300 00	–	321 75	45 75	300 00	–	–	249 41
Hopkinton, .	8–5	–	122 00	37 21	9,000 00	–	260 00	55 00	–	5,723 00	290 85	453 89
Hudson, . .	8–7	–	86 00	39 92	6,250 00	–	260 37	37 00	–	–	–	157 00
Lexington, . .	10	–	144 00	49 00	9,000 00	–	300 00	50 00	–	–	–	–

Lincoln, . .	8–14	9	–	$44 00	$2,000 00	–	$40 00	$25 00	–	$1,209 21	$77 73	$77 76
Littleton, . .	8–5	–	–	35 77	2,100 00	–	92 00	35 00	$92 00	2,379 83	142 79	142 50
Lowell, . .	9–13	–	$175 38	57 60	109,293 00	–	2,300 00	471 10	2,300 00	–	–	–
Malden, . .	10	–	173 13	53 44	35,000 00	–	950 00	75 00	–	–	–	–
Marlborough, .	8–8	–	110 00	41 11	16,000 00	–	332 00	72 00	–	2,800 00	132 00	–
Maynard, . .	9–5	–	75 00	40 00	2,500 00	–	95 00	17 00	–	–	–	224 01
Medford, . .	10	–	153 00	54 00	24,447 00	–	1,450 00	40 00	1,100 00	–	–	–
Melrose, . .	10	–	180 00	63 00	14,254 00	–	592 50	15 15	–	–	–	–
Natick, . .	7–16	–	83 18	41 20	14,000 00	–	451 25	60 00	–	–	–	–
Newton, . .	10	–	194 00	72 79	73,311 11	–	3,000 00	409 00	3,000 00	–	–	975 17
North Reading, .	8–10	–	–	39 00	1,800 00	–	92 50	10 00	–	–	–	–
Pepperell, . .	7–12	1	48 20	31 60	3,000 00	–	116 75	38 00	–	–	–	–
Reading, . .	9–10	–	94 74	42 11	8,500 00	–	275 00	50 00	–	–	–	–
Sherborn, . .	8–10	–	–	34 22	2,000 00	–	167 50	60 00	–	20,000 00	1,300 00	63 93
Shirley, . .	7–9	–	42 93	33 03	2,500 00	–	127 25	24 00	–	8,190 52	491 43	135 66
Somerville, .	10	–	191 40	65 00	73,871 83	–	2,500 00	112 00	2,500 00	–	–	–
Stoneham, . .	10–8	–	162 32	46 71	14,000 00	–	400 00	85 80	–	–	–	–
Stow, . . .	8–13	–	59 20	35 92	1,600 00	–	100 00	25 00	100 00	8,600 00	545 00	132 38
Sudbury, . .	8	–	–	37 00	2,400 00	–	130 00	20 00	–	300 00	18 00	112 00
Tewksbury, .	9–5	–	–	36 00	2,200 00	–	150 00	27 25	–	–	–	174 42
Townsend, . .	6	–	50 00	35 00	3,500 00	$62 00	200 00	25 00	–	–	–	–
Tyngsborough, .	6–2	–	57 50	26 00	1,050 00	–	66 00	13 00	–	3,309 35	153 54	–
Wakefield, . .	10	–	175 00	47 25	12,000 00	–	200 00	60 00	–	–	–	–
Waltham, . .	9–5	3	153 00	50 43	29,101 34	–	650 00	45 00	–	–	–	468 86
Watertown, .	10	–	121 73	53 68	18,858 62	–	300 00	20 00	–	–	–	–
Wayland, . .	7–18	–	60 13	36 60	3,000 00	–	150 00	25 00	–	200 00	12 00	127 59
Westford, . .	8	–	37 00	33 53	3,000 00	–	150 00	37 00	150 00	30,000 00	1,800 00	–
Weston, . .	8–18	–	122 23	36 11	3,764 80	–	130 00	–	–	–	–	–
Wilmington, .	7–4	–	–	32 33	1,550 00	–	50 00	–	–	–	–	89 00
Winchester, .	9	–	170 00	47 34	12,000 00	–	400 00	6 50	–	–	–	–
Woburn, . .	9–5	–	124 25	43 81	27,550 21	–	1,800 00	300 00	1,800 00	12,000 00	840 00	–
Total, . .	–	15	$111 34	$41 67	$819,790 05	$97 00	$25,019 79	$3,379 35	$15,665 67	$171,874 85	$11,150 83	$5,967 28

MIDDLESEX COUNTY—CONCLUDED.

TOWNS.	HIGH SCHOOLS.							INCORP. ACADEMIES.			UNINCOR. ACADEMIES AND PRIVATE SCHOOLS.			Town's share of School Fund, payable January 25, 1877.	How much of said Fund was used for apparatus and books of reference.
	Number.	No. of Teachers.	No. of Scholars.	How supported.	LENGTH.		Salary of Principal.	Number.	Average No. of Scholars.	Aggregate paid for Tuition.	Number.	Average No. of Scholars.	Aggregate paid for Tuition.		
					Months.	Days.									
Acton,	–	–	–	–	–		–	–	–	–	–	–	–	$193 76	–
Arlington,	1	3	69	Taxation,	10–5		$1,700 00	–	–	–	–	–	–	108 57	–
Ashby,	–	–	–	–	–		–	–	–	–	–	–	–	225 64	$56 75
Ashland,	1	1	60	Taxation,	10		933 00	–	–	–	3	40	$120 00	218 80	–
Ayer,	1	1	61	Taxation,	10		900 00	–	–	–	1	18	36 00	203 29	–
Bedford,	–	–	–	–	–		–	–	–	–	–	–	–	220 73	–
Belmont,	1	2	52	Taxation,	10		1,600 00	–	–	–	1	6	–	155 75	–
Billerica,	–	–	–	–	–		–	1	46	$276 00	–	–	–	204 37	–
Boxborough,	–	–	–	–	–		–	–	–	–	–	–	–	209 68	–
Burlington,	–	–	–	–	–		–	–	–	–	–	–	–	213 96	5 00
Cambridge,	1	12	431	Taxation,	10		3,840 00	–	–	–	17	1,187	30,924 00	–	–
Carlisle,	–	–	–	–	–		–	–	–	–	–	–	–	212 44	22 00
Chelmsford,	2	4	133	Taxation,	9		810 00 633 00	–	–	–	–	–	–	225 39	–
Concord,	1	2	51	Taxation,	10		1,450 00	–	–	–	2	15	2,000 00	226 77	56 69
Dracut,	–	–	–	–	–		–	–	–	–	–	–	–	233 18	70 00
Dunstable,	–	–	–	–	–		–	–	–	–	–	–	–	213 67	5 00
Everett,	1	2	40	Taxation,	10–5		1,400 00	–	–	–	1	34	1,700 00	204 42	–
Framingham,	2	4	124	Taxation,	10		1,550 00 1,300 00	–	–	–	–	–	–	242 66	133 31
Groton,	–	–	–	–	–		–	1	97	1,509 00	–	–	–	218 65	–
Holliston,	1	2	66	Taxation,	9–15		975 00	–	–	–	–	–	–	233 37	58 34
Hopkinton,	1	2	73	Taxation,	9		1,266 66	–	–	–	3	33	375 00	316 30	–
Hudson,	1	2	68	Taxation,	10		1,100 00	–	–	–	–	–	–	268 24	–

Lexington, . .	1	3	76	Taxation,	10	$1,500 00	-	-	-	1	$20	$1,000 00	$230 15	-
Lincoln, . .	1	1	34	Taxation,	7–10	525 00	-	-	-	-	-	-	221 50	-
Littleton, . .	1	1	30	In part Tax,	3	150 00	-	-	-	-	-	-	227 17	-
Lowell, . .	1	10	454	Taxation,	10–9	2,500 00	1	60	$800 00	3	570*	2,435 00	-	-
Malden, . .	1	5	142	Taxation,	10	2,100 00	-	-	-	-	-	-	297 29	-
Marlborough,	1	3	110	Taxation,	9	1,620 00	-	-	-	4	51	575 00	408 88	-
Maynard . .	1	1	76	Taxation,	9–5	693 75	-	-	-	-	-	-	203 75	$15 00
Medford, . .	1	3	118	Taxation,	10	2,200 00	-	-	-	-	-	-	176 43	-
Melrose, . .	1	3	97	Taxation,	10	1,800 00	-	-	-	-	-	-	231 30	-
Natick, . .	1	2	71	Taxation,	9–10	1,000 00	-	-	-	2	50	500 00	324 35	73 03
Newton, . .	1	7	272	Taxation,	10	3,000 00	2	182	14,000 00	4	138	3,900 00	-	-
North Reading, .	-	-	-	-	-	-	-	-	-	-	-	-	227 79	58 16
Pepperell, . .	1	1	68	Taxation,	7–10	600 00	-	-	-	-	-	-	204 51	-
Reading, . .	1	2	110	Taxation,	9–10	1,500 00	-	-	-	1	10	150 00	232 46	-
Sherborn, . .	-	-	-	-	-	-	1	60	2,075 00	-	-	-	225 95	8 55
Shirley, . .	-	-	-	-	-	-	-	-	-	-	-	-	239 32	45 00
Somerville, .	1	6	301	Taxation,	10	2,400 00	-	-	-	-	-	-	-	-
Stoneham, . .	1	3	98	Taxation,	10–15	1,475 00	-	-	-	1	25	400 00	238 34	59 78
Stow, . . .	1	1	51	In part Tax,	7	448 00	-	-	-	-	-	-	229 63	-
Sudbury, . .	-	-	-	-	-	-	-	-	-	-	-	-	231 48	25 00
Tewksbury, .	-	-	-	-	-	-	-	-	-	-	-	-	229 94	57 48
Townsend, . .	1	1	36	Taxation,	9	800 00	-	-	-	1	40	50 00	205 45	60 00
Tyngsborough, .	-	-	-	-	-	-	-	-	-	-	-	-	214 74	-
Wakefield, . .	1	2	95	Taxation,	10	1,750 00	-	-	-	-	-	-	255 56	-
Waltham, . .	1	4	150	Taxation,	9–17	2,000 00	1	58	2,800 00	1	20	600 00	259 82	-
Watertown, .	1	3	71	Taxation,	10	2,000 00	-	-	-	1	12	-	121 93	-
Wayland, . .	-	-	-	-	-	-	-	-	-	-	-	-	193 00	-
Westford, . .	-	-	-	-	-	-	1	75	800 00	1	38	58 58	202 21	-
Weston, . .	1	2	65	Taxation,	9	1,100 00	-	-	-	-	-	-	178 41	-
Wilmington, .	1	1	25	Taxation,	9	432 00	-	-	-	-	-	-	221 82	-
Winchester, .	1	3	61	Taxation,	10	1,800 00	-	-	-	2	6	1,000 00	188 30	40 00
Woburn, . .	1	4	125	Taxation,	10	1,900 00	1	30	2,000 00	4	140	1,200 00	325 85	-
Total, . .	38	109	3,964	-	-	$54,751 41	9	608	$24,260 00	54	$2,453	$47,023 58	$11,297 97	$849 09

* Five hundred in Parochial School.

NANTUCKET COUNTY.

TOWNS.	Population—State Census, 1875.	Valuation—1876.	No. of Schools.	Amount expended in 1876 for erecting School-houses.	Amount expended in 1876 for repairing School-houses.	No. of different Scholars in Public Schools during the school year.	Avg. attendance in all the Pub. Schools during the school year.	Persons under 5 years of age who attend the Public Schools.	Persons over 15 years of age who attend the Public Schools.	No. in the State between 5 and 15 years of age, May 1, 1876.	No. of different persons employed as Teachers in Pub. Sch'ls. Males.	No. of different persons employed as Teachers in Pub. Sch'ls. Fem.	No. of Teachers from Normal Schools.	Agg'te length of Public Schools for the year, in months and days.
Nantucket, . .	3,201	$2,468,010 00	13	–	$325 00	426	396	5	15	604	1	14	3	112

NORFOLK COUNTY.

TOWNS.	Population—State Census, 1875.	Valuation—1876.	No. of Schools.	Amount expended in 1876 for erecting School-houses.	Amount expended in 1876 for repairing School-houses.	No. of different Scholars in Public Schools during the school year.	Avg. attendance in all the Pub. Schools during the school year.	Persons under 5 years of age who attend the Public Schools.	Persons over 15 years of age who attend the Public Schools.	No. in the State between 5 and 15 years of age, May 1, 1876.	No. of different persons employed as Teachers in Pub. Sch'ls. Males.	No. of different persons employed as Teachers in Pub. Sch'ls. Fem.	No. of Teachers from Normal Schools.	Agg'te length of Public Schools for the year, in months and days.
Bellingham, .	1,247	$521,865 00	8	–	$172 82	257	190	13	35	216	–	10	1	63–15
Braintree, . .	4,156	2,844,350 00	16	–	499 05	723	526	6	42	741	2	19	6	144–15
Brookline, . .	6,675	27,490,300 00	28	–	500 00	1,392	982	–	171	1,190	6	35	14	280
Canton, . .	4,192	3,104,831 00	17	–	400 00	928	662	9	48	944	6	18	4	166–1
Cohasset, . .	2,197	2,339,192 00	12	–	496 03	456	328	–	37	458	2	11	1	119–10
Dedham, . .	5,756	5,960,312 00	27	–	716 22	1,005	864	3	72	1,133	5	26	5	260
Dover, . .	650	435,255 00	4	–	60 32	127	85	3	15	120	1	8	4	35–15
Foxborough, .	3,168	1,638,835 00	12	–	16 51	565	398	–	61	498	3	13	–	114–10
Franklin, . .	2,983	1,497,140 00	14	–	253 00	609	451	3	61	570	1	17	5	114
Holbrook, . .	1,726	940,360 00	8	–	200 00	392	301	6	15	378	2	12	2	80
Hyde Park, .	6,316	6,545,767 00	24	–	–	1,367	955	7	123	1,228	8	32	4	240
Medfield, . .	1,163	967,897 00	5	$1,546 07	300 67	174	133	2	14	154	1	5	3	48–10
Medway, . .	4,242	1,763,210 00	18	–	205 00	1,002	682	10	87	834	5	21	5	140–10
Milton, . .	2,738	7,894,300 00	12	–	850 00	455	365	5	44	420	5	10	5	120
Needham, . .	4,548	4,847,936 00	24	5,225 00	1,587 66	762	648	8	65	841	1	31	8	224–15
Norfolk, . .	920	426,500 00	5	–	–	198	119	–	21	188	2	6	–	41–5
Norwood, . .	1,749	1,824,291 00	9	–	202 40	442	326	–	49	399	1	10	4	82–14

Quincy, . .	9,155	$7,533,145 00	35	–	$3,500 00	1,784	1,401	–	158	1,670	7	38	20	350
Randolph, . .	4,064	2,104,510 00	17	–	116 00	718	567	13	24	810	2	15	4	161–10
Sharon, . .	1,330	1,066,912 00	6	–	127 90	276	185	4	34	280	2	6	1	53–10
Stoughton, . .	4,842	2,459,050 00	22	–	798 93	1,240	923	17	81	1,042	6	19	3	187–15
Walpole, . .	2,290	1,377,488 00	10	–	560 35	352	277	3	41	328	1	14	5	105–5
Weymouth, .	9,819	5,591,160 00	42	$1,913 29	2,204 74	2,005	1,665	–	75	1,981	8	48	–	403
Wrentham, .	2,395	1,170,572 00	13	3,319 22	207 04	492	331	5	63	409	6	14	–	100
Total, . .	88,321	$92,345,178 00	388	$12,003 58	$13,974 64	17,721	13,364	117	1,436	16,832	83	438	104	9–7

NANTUCKET COUNTY—CONTINUED.

TOWNS.	Average length as returned by Committee.	No. of Schools kept less than six months.	Average wages of Teachers per month, including the value of board.		Raised by taxes for Schools, including wages of Teachers, board, fuel, care of fires and schoolrooms, for the school year 1876–77.	Amount of board, fuel, etc., voluntarily contributed for Public Schools.	Expenses of superintendence by School Committee, including the salary of Superintendent.	Expenses of printing Reports, etc.	Salary of Superintendent of Public Schools.	Am't of School Funds, the income of which can be appropriated only for the support of Academies and Schools.	Income from local School Funds.	Income of Funds, appropriated to Public Schools at the option of the town, including tax on Dogs.
			Males.	Females.								
Nantucket, . .	8–8	–	$150 00	$31 67	$6,500 00	–	–	$29 00	–	$40,000 00	$2,500 00	–
NORFOLK COUNTY—CONTINUED.												
Bellingham, .	8	–	–	$32 33	$1,800 00	–	$85 00	$19 50	$85 00	$418 16	$25 09	$275 71
Braintree, . .	9–19	–	$91 00	35 10	6,800 00	–	246 00	59 00	–	4,500 00	350 00	411 06
Brookline, . .	10	–	220 00	73 00	38,500 00	–	–	–	–	–	–	–
Canton, . .	9–15	–	90 21	41 42	11,400 00	–	520 00	52 85	500 00	–	–	612 82
Cohasset, . .	9–19	–	50 50	36 00	5,000 00	–	260 75	45 00	200 00	1,000 00	50 62	219 05
Dedham, . .	10	–	117 00	47 10	20,488 50	–	500 00	65 00	–	1,100 00	66 00	–
Dover, . .	9–18	–	32 00	32 00	1,200 00	–	30 00	14 00	30 00	–	–	119 00
Foxborough, .	9–10	–	63 79	35 40	6,000 00	–	175 00	–	–	–	–	–
Franklin, . .	8–15	–	42 67	41 39	6,000 00	–	389 75	40 00	–	150,000 00	10,500 00	–
Holbrook, . .	10	–	116 66	38 00	5,000 00	–	220 00	–	–	–	–	152 33
Hyde Park, .	10	–	103 00	48 00	15,400 00	–	–	–	–	–	–	–
Medfield, . .	9–14	–	88 88	38 00	2,300 00	–	55 00	20 00	–	3,760 20	190 40	144 28
Medway, . .	7–16	–	84 00	35 00	7,000 00	–	335 25	40 00	–	–	–	437 50
Milton, . .	10	–	126 00	52 50	12,000 00	–	300 00	84 25	–	–	–	–
Needham, . .	9–14	–	108 34	51 31	13,500 00	–	523 50	25 00	–	1,500 00	100 00	575 19
Norfolk, . .	8–5	–	38 00	34 40	1,400 00	–	–	30 00	–	–	–	97 15
Norwood, . .	9–4	–	130 00	41 05	6,500 00	–	–	26 50	–	–	–	–

Quincy, . .	10	-	$123 00	$47 63	$25,000 00	-	$2,000 00	$21 00	$2,000 00	-	$75 00	-
Randolph, . .	9–10	-	105 16	32 00	8,600 00	-	272 00	-	-	$10,600 00	719 00	-
Sharon, . .	8–18	-	42 86	32 40	1,800 00	-	105 00	40 00	-	2,360 00	164 70	$317 74
Stoughton, . .	8–10	-	77 67	35 75	11,000 00	-	402 25	35 00	400 00	-	-	-
Walpole, . .	10–5	-	147 00	41 00	6,000 00	-	106 00	25 00	-	-	-	-
Weymouth, .	9–12	-	106 57	34 73	22,500 00	-	1,375 00	125 00	1,340 00	5,000 00	300 00	1,155 89
Wrentham, .	7–9	-	68 62	32 72	5,500 00	-	506 53	75 00	-	1,818 26	92 50	260 96
Total, . .	-	-	$94 47	$40 34	$240,688 50	-	$8,407 03	$842 10	$4,555 00	$182,056 62	$12,633 31	$4,778 68

NANTUCKET COUNTY—CONCLUDED.

TOWNS.	HIGH SCHOOLS.							INCORP. ACADEMIES.			UNINCOR. ACADEMIES AND PRIVATE SCHOOLS.			Town's share of School Fund, payable January 25, 1877.	How much of said Fund was used for apparatus and books of reference.
	Number.	No. of Teachers.	No. of Scholars.	How supported.	Length. Months.	Length. Days.	Salary of Principal.	Number.	Average No. of Scholars.	Aggregate paid for Tuition.	Number.	Average No. of Scholars.	Aggregate paid for Tuition.		
Nantucket, . .	1	2	57	Taxation,	10		$1,500 00	1	112	$800 00	–	–	–	$219 57	–

NORFOLK COUNTY—CONCLUDED.

TOWNS.	HIGH SCHOOLS.							INCORP. ACADEMIES.			UNINCOR. ACADEMIES AND PRIVATE SCHOOLS.			Town's share of School Fund, payable January 25, 1877.	How much of said Fund was used for apparatus and books of reference.
	Number.	No. of Teachers.	No. of Scholars.	How supported.	Length. Months.	Length. Days.	Salary of Principal.	Number.	Average No. of Scholars.	Aggregate paid for Tuition.	Number.	Average No. of Scholars.	Aggregate paid for Tuition.		
Bellingham, .	–	–	–	–	–		–	–	–	–	–	–	–	$230 09	$25 65
Braintree, . .	1	2	63	Taxation,	10		$1,400 00	–	–	–	1	20	$800 00	257 19	–
Brookline, . .	1	5	125	Taxation,	10		2,700 00	–	–	–	5	60	4,000 00	–	–
Canton, . .	1	2	46	Taxation,	9–16		1,200 00	–	–	–	2	10	200 00	242 64	–
Cohasset, . .	1	2	78	Taxation,	10		1,000 00	–	–	–	–	–	–	221 09	31 50
Dedham, . .	1	3	102	Taxation,	10		1,800 00	–	–	–	2	90	500 00	173 82	–
Dover, . .	–	–	–	–	–		–	–	–	–	–	–	–	217 20	18 33
Foxborough, .	1	2	50	Taxation,	10		1,200 00	–	–	–	–	–	–	224 18	–
Franklin, . .	1	1	41	Taxation,	10–6		1,100 00	1	129	$3,400 00	–	–	–	238 92	52 00
Holbrook, . .	1	2	67	Taxation,	10		1,000 00	–	–	–	–	–	–	257 57	–
Hyde Park, .	1	3	124	Taxation,	10		1,500 00	–	–	–	1	12	180 00	200 74	427 59
Medfield, . .	1	1	43	Taxation,	9–15		800 00	–	–	–	–	–	–	226 72	20 00
Medway, . .	1	1	35	Taxation,	9		900 00	–	–	–	3	75	100 00	274 85	–
Milton, . .	1	2	39	Taxation,	10		1,700 00	–	–	–	2	25	1,000 00	83 06	50 00
Needham, . .	2	2	92	Taxation,	9–15 9–15		1,200 00 1,300 00	–	–	–	–	–	–	236 06	–
Norfolk, . .	–	–	–	–	–		–	–	–	–	–	–	–	226 72	–

Norwood, . .	–	–	–	–	–	–	–	–	–	1	10	$400 00	$212 95	–
Quincy, . .	1	2	77	Taxation,	10	$1,400 00	1	141	$10,970 00	2	35	2,000 00	265 17	–
Randolph, . .	1	2	73	In part Tax,	10	1,200 00	–	–	–	1	20	100 00	288 36	–
Sharon, . .	–	–	–	–	–	–	–	–	–	1	20	500 00	191 78	–
Stoughton, . .	1	2	83	Taxation,	9	1,200 00	–	–	–	–	–	–	307 27	$32 60
Walpole, . .	1	2	45	Taxation,	10–5	1,400 00	–	–	–	1	6	60 00	206 05	–
Weymouth, .	2	4	130	Taxation,	10 10	1,280 00 1,280 00	–	–	–	3	70	600 00	297 34	–
Wrentham, .	1	1	41	Taxation,	9	900 00	–	–	–	–	–	–	215 11	–
Total, . .	21	41	1,354	–	–	$27,460 00	2	270	$14,370 00	25	453	$10,440 00	$5,294 88	$657 67

PLYMOUTH COUNTY.

TOWNS.	Population—State Census, 1875.	Valuation—1876.	No. of Schools.	Amount expended in 1876 for erecting School-houses.	Amount expended in 1876 for repairing School-houses.	No. of different Scholars in Public Schools during the school year.	Avg. attendance in all the Pub. Schools during the school year.	Persons under 5 years of age who attend the Public Schools.	Persons over 15 years of age who attend the Public Schools.	No. in the State between 5 and 15 years of age, May 1, 1876.	No. of different persons employed as Teachers in Pub. Sch'ls.		No. of Teachers from Normal Schools.	Agg'te length of Public Schools for the year, in months and days.
											Males.	Fem.		
Abington, . .	3,241	$1,752,659 00	15	–	$1,433 00	741	583	10	31	664	2	16	3	133–10
Bridgewater, .	3,969	2,003,422 00	19	$1,300 00	–	769	618	8	68	713	4	20	22	171
Brockton, . .	10,578	5,676,327 00	37	–	1,762 00	2,133	1,520	4	93	1,941	6	42	16	352
Carver, . . .	1,127	544,855 00	7	–	247 40	215	155	1	24	204	3	6	1	49–17
Duxbury, . .	2,245	1,082,400 00	11	–	858 60	353	303	1	42	376	2	14	2	99–15
E. Bridgewater, .	2,808	1,229,180 00	11	–	250 00	472	418	6	88	444	2	13	5	97–20
Halifax, . .	568	309,687 00	3	–	–	82	54	2	8	78	–	6	3	24
Hanover, . .	1,801	1,002,226 00	9	–	300 00	344	231	10	26	336	2	15	2	79
Hanson, . .	1,265	500,537 00	7	–	115 00	231	152	3	18	210	4	7	5	57–12
Hingham, . .	4,654	3,286,074 00	16	–	762 13	821	570	12	74	792	7	11	9	160
Hull, . . .	316	713,563 00	2	942 32	–	58	43	1	2	57	–	2	–	15
Kingston, . .	1,569	1,372,834 00	7	–	215 00	275	237	2	37	222	1	9	2	66–10
Lakeville, . .	1,061	518,504 00	11	–	75 00	220	165	2	19	264	4	14	2	88
Marion, . .	862	443,684 00	5	–	100 00	161	110	–	28	145	1	7	–	43–15
Marshfield, . .	1,817	980,373 00	10	–	194 00	345	249	3	40	295	2	13	4	89
Mattapoisett, .	1,361	1,968,848 00	7	–	117 50	240	171	6	12	230	4	8	2	59
Middleborough, .	5,023	2,463,898 00	23	–	189 21	922	640	16	81	881	3	33	4	197
Pembroke, . .	1,399	581,920 00	8	–	30 00	252	168	6	18	234	1	12	1	68
Plymouth, . .	6,370	4,096,079 00	27	–	2,500 00	1,219	976	10	120	1,196	5	27	5	270
Plympton, . .	755	296,741 00	5	–	–	152	99	3	28	163	1	6	2	37–10
Rochester, . .	1,001	473,657 00	7	930 62	61 21	171	149	5	14	197	–	11	2	56
Rockland, . .	4,203	1,912,575 00	18	–	434 67	991	791	3	115	968	4	20	4	166
Scituate, . .	2,463	1,278,947 00	13	–	–	574	376	2	31	474	1	21	2	121–16

South Abington,	2,456	$1,441,200 00	9	$2,100 00	$500 00	413	331	–	29	462	2	10	3	78
South Scituate, .	1,818	879,571 00	9	1,346 10	1,236 30	358	265	2	14	336	3	11	4	76–15
Wareham, . .	2,874	1,028,846 00	15	–	794 00	620	455	12	65	614	2	18	2	119–10
W. Bridgewater,	1,738	868,635 00	9	–	108 29	345	256	7	24	332	1	14	–	72
Total, . .	69,362	$38,707,242 00	320	$6,619 04	$12,283 31	13,477	10,085	137	1,149	12,768	67	386	107	8–18

SUFFOLK COUNTY.

Boston, . .	341,919	$748,996,210 00	465	$356,039 62	$173,926 06	55,417	42,797	–	4,367	58,636	201	1,104	480	4,778
Chelsea, . .	20,737	17,759,530 00	66	–	–	3,727	2,829	–	278	3,169	6	62	17	600
Revere, . .	1,603	2,076,470 00	6	–	–	423	221	–	–	314	1	5	3	60
Winthrop, . .	627	1,085,254 00	4	–	51 90	129	94	–	12	117	–	6	1	39
Total, . .	364,886	$769,917,464 00	541	$356,039 62	$173,977 96	59,696	45,941	–	4,667	62,236	208	1,177	501	10–2

PLYMOUTH COUNTY—CONTINUED.

TOWNS.	Average length as returned by Committee.	No. of Schools kept less than six months.	Average wages of Teachers per month, including the value of board.		Raised by taxes for Schools, including wages of Teachers, board, fuel, care of fires and school-rooms, for the school year 1876–77.	Amount of board, fuel, etc., voluntarily contributed for Public Schools.	Expenses of superintendence by School Committee, including the salary of Superintendent.	Expenses of printing Reports, etc.	Salary of Superintendent of Public Schools.	Am't of School Funds, the income of which can be appropriated only for the support of Academies and Schools.	Income from local School Funds.	Income of Funds, appropriated to Public Schools at the option of the town, including tax on Dogs.
			Males.	Females.								
Abington, . .	8–18	–	$110 00	$34 62	$6,000 00	–	$275 00	$300 00	–	–	–	$328 00
Bridgewater, .	9	–	85 00	37 00	8,700 00	–	250 00	15 00	–	$4,300 00	–	386 00
Brockton, . .	9–5	–	90 29	34 50	22,975 00	–	607 70	140 68	–	295 50	$17 73	345 16
Carver, . .	7–2	1	40 00	33 00	1,500 00	–	–	13 50	–	4,800 00	–	25 68
Duxbury, . .	9–1	–	64 09	36 69	2,800 00	–	196 00	41 00	–	25,200 00	1,650 00	247 00
E. Bridgewater, .	8–17	–	75 00	29 75	5,050 00	–	181 42	98 90	–	–	–	229 24
Halifax, . .	8	–	–	31 13	900 00	–	40 00	–	–	–	–	–
Hanover, . .	8–16	–	83 33	32 00	3,000 00	–	150 00	25 00	–	2,866 00	172 00	125 00
Hanson, . .	8–5	–	48 00	24 00	1,600 00	–	130 00	30 00	–	–	–	87 44
Hingham, . .	10	–	60 00	40 00	11,735 49	–	462 00	50 00	$462 00	30,300 00	2,280 00	–
Hull, . . .	7–10	–	–	40 00	750 00	–	20 00	14 00	–	–	–	–
Kingston, . .	9–10	–	140 00	36 00	3,200 00	–	250 00	25 00	250 00	–	–	127 63
Lakeville, . .	8	–	31 00	26 75	2,179 77	–	65 00	25 00	–	–	–	130 00
Marion, . .	8–15	–	27 00	27 20	1,000 00	–	60 00	15 00	60 00	–	–	–
Marshfield, .	8–18	–	36 00	30 68	2,800 00	–	103 00	40 00	–	–	–	185 23
Mattapoisett, .	8–10	–	36 00	30 06	2,100 00	–	49 50	13 00	–	8,552 00	453 38	93 00
Middleborough, .	8–11	–	76 00	34 25	8,000 00	–	292 00	22 00	–	35,000 00	2,400 00	–
Pembroke, . .	8–10	–	40 00	31 43	1,800 00	–	183 20	12 88	–	–	–	86 56
Plymouth, . .	10	–	92 00	33 49	15,500 00	–	550 00	48 00	500 00	–	–	–
Plympton, . .	7–10	–	34 00	30 67	1,000 00	–	–	18 00	–	–	–	110 73
Rochester, . .	8	–	–	29 50	1,200 00	–	75 00	–	–	–	–	120 58
Rockland, . .	9–7	–	65 50	35 07	7,000 00	–	215 00	39 75	–	–	–	333 73
Scituate, . .	9–7	–	73 60	24 61	3,500 00	–	150 00	30 00	–	–	–	147 97

South Abington,	8–15	–	$88 50	$34 00	$4,500 00	$12 00	$194 55	–	–	–	–	$209 55
South Scituate, .	8–10	–	38 00	32 00	3,000 00	–	120 00	$25 00	–	–	–	174 39
Wareham, . .	7–19	–	82 50	31 44	5,500 00	–	139 90	33 00	–	–	–	267 00
W. Bridgewater,	8	–	40 00	35 50	2,500 00	–	90 34	45 00	$74 00	80,000 00	4,800 00	252 53
Total, . .	–	1	$64 82	$32 42	$129,790 26	$12 00	$4,849 61	$1,119 71	$1,346 00	191,313 50	11,773 11	$4,012 42

SUFFOLK COUNTY—Continued.

Boston, . .	10–1	–	$279 50	$84 39	$1,377,711 01	–	$31,428 35	$1,548 73	$4,500 00	$45,587 46	$1,404 17	$16,752 70
Chelsea, . .	10	–	172 00	61 26	55,194 08	–	2,000 00	218 00	2,000 00	–	–	–
Revere, . .	10	–	90 00	40 00	3,500 00	–	100 00	14 76	–	–	–	131 80
Winthrop, . .	9–15	–	–	39 00	1,800 00	–	70 00	20 00	–	–	–	87 90
Total, . .	–	–	$180 50	$56 16	$1,438,205 09	–	$33,598 35	$1,801 49	$6,500 00	$45,587 46	$1,404 17	$16,972 40

PLYMOUTH COUNTY—CONCLUDED.

TOWNS.	HIGH SCHOOLS.							INCORP. ACADEMIES.			UNINCOR. ACADEMIES AND PRIVATE SCHOOLS.			Town's share of School Fund, payable January 25, 1877.	How much of said Fund was used for apparatus and books of reference.
	Number.	No. of Teachers.	No. of Scholars.	How supported.	LENGTH.		Salary of Principal.	Number.	Average No. of Scholars.	Aggregate paid for Tuition.	Number.	Average No. of Scholars.	Aggregate paid for Tuition.		
					Months.	Days.									
Abington, . .	2	5	173	Taxation,	10*		$1,100 00*	–	–	–	2	8	$50 00	$262 40	$100 00
Bridgewater, .	1	3	83	Taxation,	9		1,500 00	–	–	–	–	–	–	257 80	40 00
Brockton, . .	1	3	128	Taxation,	9–3		1,850 00	–	–	–	1	15	200 00	302 51	–
Carver, . .	–	–	–	–	–		–	–	–	–	–	–	–	208 19	–
Duxbury, . .	1	2	43	In part Tax,	10		1,000 00	1	43	–	–	–	–	212 35	–
E. Bridgewater, .	1	2	85	Taxation,	10		1,100 00	–	–	–	1	16	19 20	231 53	–
Halifax, . .	–	–	–	–	–		–	–	–	–	–	–	–	211 83	–
Hanover, . .	1	3	53	Taxation,	9		750 00	1	48	$610 00	–	–	–	202 35	–
Hanson, . .	–	–	–	–	–		–	–	–	–	–	–	–	234 86	–
Hingham, . .	1	3	71	Taxation,	10		1,800 00	1	60	2,000 00	2	20	200 00	223 32	–
Hull, . . .	–	–	–	–	–		–	–	–	–	–	–	–	209 98	–
Kingston, . .	1	1	55	Taxation,	9–10		1,330 00	–	–	–	1	14	–	190 69	–
Lakeville, . .	–	–	–	–	–		–	–	–	–	–	–	–	231 70	–
Marion, . .	–	–	–	–	–		–	–	–	–	1	30	24 00	225 33	–
Marshfield, .	–	–	–	–	–		–	–	–	–	–	–	–	246 99	30 00
Mattapoisett, .	1	1	43	In part Tax,	10		800 00	–	–	–	3	29	80 00	185 32	–
Middleborough, .	1	2	52	Taxation,	9–10		1,350 00	1	22	220 00	2	70	700 00	288 69	–
Pembroke, . .	–	–	–	–	–		–	–	–	–	–	–	–	236 39	–
Plymouth, . .	1	3	150	Taxation,	10		1,500 00	–	–	–	3	60	–	279 51	–
Plympton, . .	–	–	–	–	–		–	–	–	–	–	–	–	226 72	–
Rochester, . .	–	–	–	–	–		–	–	–	–	–	–	–	228 24	–
Rockland, . .	1	2	67	Taxation,	10		1,400 00	–	–	–	–	–	–	254 66	–
Scituate, . .	1	1	52	Taxation,	9		700 00	–	–	–	–	–	–	297 12	–

South Abington,	1	2	47	Taxation,	10	$1,000 00	-	-	-	-	-	-	$220 78	-
South Scituate, .	-	-	-	-	-	-	-	-	-	-	-	-	214 35	$27 00
Wareham, . .	1	2	97	Taxation,	10	1,200 00	-	-	-	1	33	$1,600 00	249 60	72 35
W. Bridgewater,	-	1	-	-	-	-	-	-	-	-	-	-	244 14	-
Total, . .	16	35	1,199	-	-	$19,480 00	4	173	$2,830 00	17	295	$2,873 20	$6,377 44	$269 35

SUFFOLK COUNTY—CONCLUDED.

Boston, . .	9	96	2,106	Taxation,	10	$33,600 00	4	-	-	94	2,504	$275,575 00	-	-
Chelsea, . .	1	6	202	Taxation,	10	2,500 00	-	-	-	3	445	5,300 00	-	-
Revere, . .	-	-	-	-	-	-	-	-	-	-	-	-	$193 77	-
Winthrop, . .	-	-	-	-	-	-	-	-	-	-	-	-	169 03	$29 40
Total, . .	10	102	2,308	-	-	$36,100 00	4	-	-	97	2,949	$280,875 00	$362 80	$29 40

---

* Each.

WORCESTER COUNTY.

TOWNS.	Population—State Census, 1875.	Valuation—1876.	No. of Schools.	Amount expended in 1876 for erecting School-houses.	Amount expended in 1876 for repairing School-houses.	No. of different Scholars in Public Schools during the school year.	Avg. attendance in all the Pub. Schools during the school year.	Persons under 5 years of age who attend the Public Schools.	Persons over 15 years of age who attend the Public Schools.	No. in the State between 5 and 15 years of age, May 1, 1876.	No. of different persons employed as Teachers in Pub. Sch'ls. Males.	No. of different persons employed as Teachers in Pub. Sch'ls. Fem.	No. of Teachers from Normal Schools.	Agg'te length of Public Schools for the year, in months and days.
Ashburnham,	2,141	$1,063,376 00	13	–	–	455	306	2	83	411	4	11	2	83
Athol,	4,134	2,741,127 00	18	–	$283 98	714	581	9	78	595	2	28	4	141–15
Auburn,	1,233	517,212 00	7	–	30 00	240	181	5	13	286	3	8	1	42
Barre,	2,460	1,618,813 00	16	–	213 09	394	354	16	37	357	2	20	3	115
Berlin,	987	473,667 00	6	–	–	226	201	1	52	197	–	9	4	34–5
Blackstone,	4,640	2,049,540 00	18	–	163 95	1,057	717	7	54	967	3	19	2	159–8
Bolton,	987	497,011 00	7	–	13 00	235	168	3	52	178	1	11	–	51–10
Boylston,	895	543,035 00	7	–	300 00	208	139	10	47	164	2	7	2	53–15
Brookfield,	2,660	1,187,499 00	14	–	–	522	396	4	69	427	1	17	4	113–10
Charlton,	1,852	994,250 00	13	–	50 00	416	277	7	86	314	10	19	1	97–10
Clinton,	6,781	4,494,641 00	22	$6,032 00	940 77	1,360	1,068	–	56	1,447	1	25	2	199–16
Dana,	760	288,977 00	4	–	44 81	142	94	16	29	101	1	5	1	28–10
Douglas,	2,202	1,036,925 00	13	–	–	402	288	11	52	452	6	17	2	106–17
Dudley,	2,653	957,225 00	12	–	450 00	639	410	26	78	610	4	13	–	96
Fitchburg,	12,289	11,714,888 00	49	–	1,798 78	2,319	1,783	20	71	2,208	6	54	6	485
Gardner,	3,730	2,052,284 00	15	–	1,279 21	757	494	1	90	659	1	17	2	113–10
Grafton,	4,442	1,879,148 00	20	–	391 68	894	641	12	68	842	3	21	2	132
Hardwick,	1,992	1,033,605 00	12	–	71 68	501	320	4	65	425	6	15	1	87–15
Harvard,	1,304	868,342 00	10	–	62 21	307	205	6	42	243	6	12	2	65–5
Holden,	2,180	987,130 00	12	–	282 20	477	286	4	47	469	1	20	3	90
Hubbardston,	1,440	879,499 00	11	–	200 00	359	243	6	86	264	2	15	4	68
Lancaster,	1,957	2,070,497 00	10	–	88 87	370	242	11	63	283	3	10	2	81
Leicester,	2,770	1,812,761 00	14	–	209 27	653	399	6	47	540	7	15	1	116–8
Leominster,	5,201	3,980,933 00	19	–	1,450 00	972	716	3	129	807	2	24	3	149–11
Lunenburg,	1,153	767,005 00	8	–	–	225	155	5	36	171	1	8	2	48–15

Mendon, . .	1,176	$661,186 00	8	–	$25 00	281	212	14	51	215	3	8	1	55–10
Milford, . .	9,818	5,070,421 00	37	–	757 82	2,171	1,695	14	157	2,223	1	45	15	280
Millbury, . .	4,529	2,500,044 00	16	–	342 16	766	395	4	23	930	2	15	3	147–2
New Braintree, .	606	472,350 00	5	–	31 07	123	84	2	29	107	1	7	1	36
Northborough, .	1,398	1,235,998 00	7	–	127 99	276	183	5	41	232	1	10	4	59–5
Northbridge, .	4,030	1,803,658 00	16	–	–	873	593	5	61	825	1	22	12	148–5
North Brookfield,	3,749	1,798,110 00	15	–	1,318 57	828	619	2	60	761	6	18	1	109
Oakham, . .	873	356,221 00	6	–	160 00	180	130	3	58	156	4	6	1	36
Oxford, . .	2,938	1,398,395 00	12	–	223 33	576	369	5	88	484	4	20	2	100–15
Paxton, . .	608	308,389 00	6	–	115 00	157	116	4	24	119	1	8	–	36
Petersham, . .	1,203	646,745 00	12	–	248 64	287	193	1	66	195	1	16	2	77–15
Phillipston, .	666	319,009 00	6	–	202 00	130	99	–	37	117	2	7	–	40–10
Princeton, . .	1,063	935,151 00	9	–	82 78	242	157	6	75	200	4	9	1	54
Royalston, . .	1,260	665,674 00	11	–	30 00	239	173	4	46	189	3	12	1	66
Rutland, . .	1,030	501,675 00	10	$600 00	106 14	210	189	16	29	194	3	15	1	60
Shrewsbury, .	1,524	1,119,770 00	9	–	126 15	317	224	8	55	283	1	13	2	82–11
Southborough, .	1,986	1,313,413 00	10	–	562 00	422	290	11	50	379	3	11	2	81–8
Southbridge, .	5,740	2,946,351 00	22	2,984 41	317 80	1,188	704	11	48	1,145	2	28	1	173–15
Spencer, . .	5,451	2,704,250 00	20	7,399 88	50 00	872	728	2	54	1,058	4	25	1	158–10
Sterling, . .	1,569	1,061,133 00	12	–	218 97	337	200	7	47	285	4	15	4	89–7
Sturbridge, .	2,213	1,127,113 00	14	–	92 20	407	233	15	32	391	2	18	–	110
Sutton, . .	3,051	1,420,675 00	14	1,070 00	160 00	609	349	9	52	662	2	17	1	107–4
Templeton, .	2,764	1,100,768 00	14	–	438 47	521	437	12	82	488	3	15	1	107–10
Upton, . .	2,125	871,383 00	11	350 79	287 37	338	297	6	49	324	2	14	3	84
Uxbridge, . .	3,029	1,841,108 00	18	–	–	562	473	16	71	626	1	25	2	148–8
Warren, . .	3,260	1,843,498 00	17	–	404 74	716	441	1	51	525	5	23	2	117
Webster, . .	5,064	1,968,795 00	12	–	200 00	809	524	5	44	708	2	12	–	106–8
Westborough, .	5,141	2,475,122 00	16	6,000 00	589 28	876	596	–	107	786	1	23	6	132–5
West Boylston, .	2,902	1,059,775 00	11	–	356 32	496	418	9	28	623	2	15	2	91–15
West Brookfield,	1,903	784,482 00	10	–	–	375	295	3	57	376	2	14	2	75–15
Westminster, .	1,712	819,750 00	13	–	150 00	293	253	7	56	252	2	19	3	84–15
Winchendon, .	3,762	2,158,955 00	18	–	120 27	724	522	6	94	740	2	22	2	110–5
Worcester, . .	49,317	48,219,397 00	155	–	2,661 36	9,936	6,926	–	1,419	8,801	20	160	78	1,603–10
Total, . .	210,295	$140,018,154 00	922	$24,437 08	$18,828 93	41,981	29,781	408	4,771	38,816	175	1,107	213	8–3

WORCESTER COUNTY—CONTINUED.

TOWNS.	Average length as returned by Committee.	No. of Schools kept less than six months.	Average wages of Teachers per month, including the value of board.		Raised by taxes for Schools, including wages of Teachers, board, fuel, care of fires and school-rooms, for the school year 1876-77.	Amount of board, fuel, etc., voluntarily contributed for Public Schools.	Expenses of superintendence by School Committee, including the salary of Superintendent.	Expenses of printing Reports, etc.	Salary of Superintendent of Public Schools.	Am't of School Funds, the income of which can be appropriated only for the support of Academies and Schools.	Income from local School Funds.	Income of Funds, appropriated to Public Schools at the option of the town, including tax on Dogs.
			Males.	Females.								
Ashburnham, . .	6–7	–	$33 33	$27 57	$3,000 00	–	$150 00	$15 00	–	$130,000 00	$6,000 00	$122 40
Athol, . .	7–18	–	110 00	36 00	7,442 32	–	325 00	32 00	–	–	–	305 51
Auburn, . .	6	–	40 00	31 00	1,500 00	$16 00	70 00	10 00	–	–	–	–
Barre, . .	7–4	1	75 55	32 33	5,367 67	–	196 12	37 00	–	–	–	183 60
Berlin, . .	5–15	1	–	40 80	1,100 00	–	60 00	16 00	–	2,020 00	141 40	117 99
Blackstone, .	8–17	–	72 88	31 93	6,646 96	–	285 00	41 00	–	–	–	277 11
Bolton, . .	7–7	–	70 00	30 00	1,200 00	–	98 00	24 00	–	12,000 00	840 84	–
Boylston, . .	7–13	–	50 00	30 44	1,525 00	35 00	95 00	25 00	–	–	–	85 19
Brookfield, . .	8–2	–	110 52	32 10	4,600 00	–	110 00	30 00	–	–	–	288 15
Charlton, . .	7–10	–	40 00	31 00	3,000 00	–	165 75	17 00	–	2,000 00	120 00	–
Clinton, . .	9–2	–	159 15	46 62	14,385 20	–	350 00	62 35	–	–	–	–
Dana, . . .	7–2	–	20 00	28 00	800 00	–	71 00	27 00	–	–	–	53 86
Douglas, . .	8–4	1	53 67	31 40	4,000 00	–	100 00	21 50	–	–	–	287 72
Dudley, . .	8	1	57 00	37 00	4,200 00	–	200 00	15 00	–	6,000 00	420 00	145 74
Fitchburg, . .	9–18	–	25 00	43 95	36,000 00	–	1,800 00	100 00	$1,800 00	–	–	–
Gardner, . .	7–18	–	133 33	45 52	6,500 00	–	278 88	60 80	–	1,000 00	60 00	286 42
Grafton, . .	7–4	–	138 88	37 50	6,750 00	–	581 75	40 00	–	1,000 00	65 00	–
Hardwick, . .	7–7	–	37 48	30 14	2,600 00	–	146 25	42 00	–	200 00	16 00	387 94
Harvard, . .	6–11	–	38 83	32 78	2,400 00	–	146 39	31 57	–	–	–	–
Holden, . .	7–10	–	50 00	29 94	2,500 00	–	142 50	25 00	–	3,366 66	202 00	256 06
Hubbardston, .	6–4	–	59 50	29 70	2,500 00	–	138 00	32 00	–	1,200 00	72 00	–
Lancaster, . .	9	–	90 00	37 00	6,000 00	–	203 16	29 65	–	–	–	–
Leicester, . .	8–18	–	120 00	39 20	5,600 00	–	259 60	–	–	29,000 00	1,904 00	416 57
Leominster, .	7–18	–	108 00	40 00	8,509 25	–	342 45	56 00	–	11,433 33	680 00	–
Lunenburg, .	6–2	–	40 00	36 88	1,800 00	28 50	143 56	50 00	–	–	–	66 04

Mendon, . .	6–19	–	$55 00	$31 35	$1,700 00	–	$75 00	$36 00	–	–	–	$243 32
Milford, . .	7–16	–	170 00	38 55	16,588 00	–	515 00	–	–	–	–	316 28
Millbury, . .	10	–	40 00	37 60	7,000 00	–	375 00	–	–	–	–	–
New Braintree, .	7–4	–	38 00	32 93	1,400 00	–	114 25	19 00	–	–	–	70 96
Northborough, .	8–9	–	102 56	33 71	3,200 00	$67 06	70 00	30 00	–	–	–	–
Northbridge, .	9–5	–	150 00	42 64	7,950 00	–	200 00	50 00	–	–	–	373 20
North Brookfield,	7–16	1	53 00	36 00	6,500 00	100 00	200 00	52 00	–	–	–	266 87
Oakham, . .	6	–	33 75	24 14	900 00	10 00	80 50	20 00	–	–	–	112 61
Oxford, . .	8–8	–	63 50	32 72	4,600 00	–	209 70	23 50	–	–	–	–
Paxton, . .	6	–	52 00	27 63	1,157 78	–	71 00	11 25	–	–	–	66 07
Petersham, . .	6–10	–	30 00	29 42	2,250 00	–	195 00	25 00	–	$735 00	$44 00	110 00
Phillipston, .	6–15	–	32 00	30 00	1,000 00	–	53 00	25 00	–	–	–	76 38
Princeton, . .	6	–	45 00	31 00	1,700 00	–	86 68	12 00	–	–	–	–
Royalston, . .	6	–	39 50	27 00	1,500 00	–	113 50	26 00	–	6,500 00	341 47	90 09
Rutland, . .	6	–	37 33	32 85	2,050 00	–	121 85	15 00	–	–	–	59 00
Shrewsbury, .	9–3	–	80 00	33 83	3,000 00	–	172 50	20 00	–	–	–	–
Southborough, .	8–2	–	64 33	35 00	4,500 00	–	180 00	12 00	–	3,000 00	–	99 88
Southbridge, .	7–17	–	38 00	36 19	9,000 00	–	450 00	50 00	–	–	–	–
Spencer, . .	8–5	–	59 25	35 25	6,500 00	–	280 00	40 00	–	–	–	–
Sterling, . .	7–9	–	44 11	34 01	3,200 00	–	155 00	20 00	–	–	–	191 27
Sturbridge, .	7–18	–	44 00	29 19	3,657 56	–	123 62	36 38	–	–	–	–
Sutton, . .	7–13	1	67 22	29 80	3,800 00	–	150 00	25 00	–	2,000 00	120 00	190 94
Templeton, .	7–10	–	78 00	31 33	4,700 00	–	211 40	44 00	–	–	–	169 89
Upton, . .	7–12	–	66 00	36 26	4,026 78	–	192 25	18 00	–	–	–	–
Uxbridge, . .	8–5	–	100 00	34 21	6,300 00	–	100 00	65 00	–	–	–	220 00
Warren, . .	6–15	–	69 60	32 26	5,000 00	–	233 82	63 00	–	–	–	–
Webster, . .	8–17	–	77 50	39 83	6,200 00	–	225 00	24 00	–	–	–	268 30
Westborough, .	8–6	–	92 30	42 33	7,775 00	–	600 00	–	$600 00	–	–	–
West Boylston, .	8–7	–	44 00	35 00	3,000 00	–	237 25	30 00	–	–	–	339 00
West Brookfield,	7–10	–	65 00	32 00	3,000 00	48 00	130 00	26 00	–	–	–	–
Westminster, .	7	–	48 00	28 56	2,625 00	–	160 00	8 75	–	–	–	–
Winchendon, .	6–9	–	122 00	32 32	5,693 46	–	243 87	81 00	–	–	–	–
Worcester, . .	10	–	193 94	54 98	126,600 07	–	3,000 00	326 61	3,000 00	1,239 51	74 83	–
Total, . .	–	6	$70 67	$34 29	$408,000 05	$304 56	$15,783 60	$2,074 36	$5,400 00	$212,694 50	$11,101 54	$6,544 36

WORCESTER COUNTY—CONCLUDED.

TOWNS.	HIGH SCHOOLS.							INCORP. ACADEMIES.			UNINCOR. ACADEMIES AND PRIVATE SCHOOLS.			Town's share of School Fund, payable January 25, 1877.	How much of said Fund was used for apparatus and books of reference.
	Number.	No. of Teachers.	No. of Scholars.	How supported.	LENGTH.		Salary of Principal.	Number.	Average No. of Scholars.	Aggregate paid for Tuition.	Number.	Average No. of Scholars.	Aggregate paid for Tuition.		
					Months.	Days.									
Ashburnham,	–	–	–	–	–		–	1	107	$1,000 00	1	23	$60 00	$215 57	–
Athol,	1	2	87	Taxation,	9	15	$1,100 00	–	–	–	–	–	–	247 37	–
Auburn,	–	–	–	–	–		–	–	–	–	–	–	–	240 55	$40 00
Barre,	1	2	70	Taxation,	9		1,000 00	–	–	–	–	–	–	207 27	–
Berlin,	1	1	31	Taxation,	3		150 00	–	–	–	–	–	–	230 55	–
Blackstone,	1	3	85	Taxation,	9	9	1,000 00	–	–	–	1	10	800 00	313 55	–
Bolton,	1	1	68	Not by Tax,	10		700 00	–	–	–	–	–	–	229 78	4 79
Boylston,	1	1	42	Taxation,	3	15	210 00	–	–	–	–	–	–	220 27	–
Brookfield,	1	1	54	Taxation,	9	10	1,050 00	–	–	–	–	–	–	214 64	41 00
Charlton,	–	–	–	–	–		–	–	–	–	–	–	–	252 06	–
Clinton,	1	2	64	Taxation,	9	9	1,500 00	–	–	–	1	30	500 00	322 35	–
Dana,	–	–	–	–	–		–	–	–	–	–	–	–	217 81	24 30
Douglas,	1	1	36	Taxation,	9	2	698 00	–	–	–	1	40	500 00	216 50	–
Dudley,	1	1	58	Taxation,	10		1,000 00	1	175	525 00	–	–	–	282 77	–
Fitchburg,	1	6	171	Taxation,	10		2,250 00	–	–	–	2	40	1,000 00	–	–
Gardner,	1	2	65	Taxation,	9	15	1,300 00	–	–	–	–	–	–	261 48	92 50
Grafton,	1	2	56	Taxation,	9		1,250 00	–	–	–	–	–	–	292 95	–
Hardwick,	–	–	–	–	–		–	–	–	–	–	–	–	217 71	–
Harvard,	–	–	–	–	–		–	–	–	–	–	–	–	239 01	–
Holden,	–	–	–	–	–		–	–	–	–	–	–	–	265 88	–
Hubbardston,	–	–	–	–	–		–	–	–	–	–	–	–	240 69	–
Lancaster,	1	2	40	Taxation,	9		1,800 00	–	–	–	1	–	75 00	194 99	–
Leicester,	1	3	35	In part Tax,	10		1,600 00	1	48	1,892 00	–	–	–	224 18	22 50
Leominster,	1	3	172	In part Tax,	10		1,800 00	–	–	–	1	23	150 00	217 64	54 41
Lunenburg,	–	–	–	–	–		–	–	–	–	1	24	96 00	224 72	20 00

Mendon, . .	1	1	47	Taxation,	6	$480 00	–	–	–	–	–	–	$234 84	$43 54
Milford, . .	1	3	138	Taxation,	10	1,700 00	–	–	–	3	75	$800 00	340 74	–
Millbury, . .	1	2	67	Taxation,	10	1,400 00	–	–	–	–	–	–	298 04	–
New Braintree, .	–	–	–	–	–	–	–	–	–	–	–	–	217 50	32 00
Northborough, .	1	2	65	Taxation,	9–15	1,000 00	–	–	–	2	20	800 00	187 78	–
Northbridge, .	1	1	52	Taxation,	10	1,500 00	–	–	–	–	–	–	281 60	316 25
North Brookfield,	1	2	70	Taxation,	9–10	1,500 00	–	–	–	1	20	–	266 87	108 95
Oakham, . .	–	–	–	–	–	–	–	–	–	2	50	150 00	224 87	–
Oxford, . .	1	1	42	Taxation,	10	1,000 00	–	–	–	–	–	–	237 39	3 00
Paxton, . .	–	–	–	–	–	–	–	–	–	–	–	–	218 57	25 00
Petersham, . .	1	2	55	In part Tax,	9	515 45	–	–	–	–	–	–	232 25	12 68
Phillipston, .	–	–	–	–	–	–	–	–	–	–	–	–	222 25	11 00
Princeton, . .	–	–	–	–	–	–	–	–	–	2	55	107 00	229 94	–
Royalston, . .	–	–	–	–	–	–	–	–	–	–	–	–	232 10	49 69
Rutland, . .	–	–	–	–	–	–	–	–	–	–	–	–	232 86	–
Shrewsbury, .	1	1	49	Taxation,	9–5	740 00	–	–	–	1	20	75 00	192 55	–
Southborough, .	1	2	80	Taxation,	9–10	1,000 00	–	–	–	3	80	13,934 00	207 43	16 70
Southbridge, .	1	2	40	Taxation,	9–15	1,200 00	–	–	–	–	–	–	321 20	–
Spencer, . .	1	2	64	Taxation,	10	1,250 00	–	–	–	1	40	300 00	299 57	–
Sterling, . .	–	–	–	–	–	–	–	–	–	–	–	–	196 22	–
Sturbridge, .	–	–	–	–	–	–	–	–	–	–	–	–	209 42	–
Sutton, . .	1	2	50	Taxation,	9	850 00	–	–	–	–	–	–	267 03	–
Templeton, .	1	2	48	Taxation,	10	1,200 00	–	–	–	–	–	–	229 99	112 10
Upton, . .	1	2	56	Taxation,	9	900 00	–	–	–	1	19	285 00	258 66	–
Uxbridge, . .	1	1	43	Taxation,	10	1,000 00	–	–	–	–	–	–	238 61	18 87
Warren, . .	1	1	30	Taxation,	9	900 00	–	–	–	2	30	40 50	225 55	–
Webster, . .	1	2	65	Taxation,	10	1,100 00	–	–	–	–	–	–	284 22	–
Westborough, .	1	3	92	Taxation,	9–15	900 00	–	–	–	2	44	5 50	265 79	–
West Boylston, .	2	4	74	Taxation,	9 9	450 00 369 00	–	–	–	–	–	–	–	–
West Brookfield,	–	–	–	–	–	–	–	–	–	–	–	–	258 97	76 52
Westminster, .	1	1	38	In part Tax,	2–15	165 00	–	–	–	–	–	–	240 86	–
Winchendon, .	1	1	43	Taxation,	9	1,146 18	–	–	–	–	–	–	261 17	37 72
Worcester, . .	1	12	545	Taxation,	10	3,000 00	3	200*	$3,000 00*	6	1,242	5,000 00	–	–
Total, . .	40	85	2,987	–	–	$43,673 63	6	530	$6,417 00	35	1,885	$24,678 00	$13,405 13	$1,163 52

* Estimated.

RECAPITULATION.

COUNTIES.	Population—State Census, 1875.	Valuation—1876.	No. of Schools.	Amount expended in 1876 for erecting School-houses.	Amount expended in 1876 for repairing School-houses.	No. of different Scholars in Public Schools during the school year.	Avg. attendance in all the Pub. Schools during the school year.	Persons under 5 years of age who attend the Public Schools.	Persons over 15 years of age who attend the Public Schools.
Barnstable, . .	32,144	$15,308,042 00	167	$1,368 91	$5,171 80	6,778	4,926	49	1,119
Berkshire, . .	68,270	36,233,124 00	341	19,581 06	4,548 97	14,585	9,573	225	1,316
Bristol, . . .	131,087	112,132,026 00	435	50,533 82	20,022 36	24,186	15,985	158	1,770
Dukes, . . .	4,071	3,379,577 00	24	–	605 58	728	572	6	94
Essex, . . .	223,342	163,097,643 00	624	25,292 04	68,311 04	39,393	28,932	172	3,190
Franklin, . .	33,696	16,193,624 00	243	1,412 54	5,467 33	6,926	4,954	136	925
Hampden, . .	94,304	70,733,508 00	359	2,150 00	10,677 67	16,554	11,107	211	1,479
Hampshire, . .	44,821	25,425,898 00	268	2,559 46	4,951 06	9,269	6,417	127	983
Middlesex, . .	284,112	283,399,941 00	911	84,166 98	31,173 55	56,112	40,671	307	5,276
Nantucket, . .	3,201	2,468,010 00	13	–	325 00	426	396	5	15
Norfolk, . . .	88,321	92,345,178 00	388	12,003 58	13,974 64	17,721	13,364	117	1,436
Plymouth, . .	69,362	38,707,242 00	320	6,619 04	12,283 31	13,477	10,085	137	1,149
Suffolk, . . .	364,886	769,917,464 00	541	356,039 62	173,977 96	59,696	45,941	–	4,667
Worcester, . .	210,295	140,018,154 00	922	24,437 08	18,828 93	41,981	29,781	408	4,771
Totals, . .	1,651,912	$1,769,359,431 00	5,556	$586,164 13	$370,319 20	307,832	222,704	2,058	28,190

RECAPITULATION—Continued.

COUNTIES.	No. in the State between 5 and 15 years of age, May 1, 1876.	No. of different persons employed as Teachers in Public Schools.		No. of Teachers from Normal Schools.	Agg'te length of Public Schools for the year, in months and days.	Average of months for the year.	Schools kept less than six months.	Average Wages of Teachers per month, including the value of Board.		Raised by Taxes for Schools, including wages of Teachers, board, fuel, care of fires and school-rooms, for the sch'l-year 1876-77.
		Males.	Females.					Males.	Females.	
Barnstable, . .	5,930	56	171	25	1,337-13	8	2	$65 72	$31 01	$62,031 00
Berkshire, . .	13,913	77	422	65	2,684-9	7-17	6	46 72	26 85	108,349 50
Bristol, . . .	22,988	67	534	97	3,864	8-18	3	73 11	35 64	270,202 04
Dukes, . . .	718	7	27	2	162	6-15	1	48 75	26 67	6,125 00
Essex, . . .	39,591	104	876	210	5,972-19	9-11	3	98 58	37 70	494,948 53
Franklin, . .	5,992	43	346	34	1,667-2	6-17	3	42 38	27 06	55,255 96
Hampden, . .	16,787	66	462	114	3,089-6	8-12	5	59 77	31 34	211,828 87
Hampshire, . .	8,485	55	355	54	2,061	7-14	4	44 19	27 46	79,961 00
Middlesex, . .	50,715	167	1,289	369	8,157-01	8-19	15	111 34	41 67	819,790 05
Nantucket, . .	604	1	14	3	112	8-8	-	150 00	31 67	6,500 00
Norfolk, . . .	16,832	83	438	104	3,637	9-7	-	94 47	40 34	240,688 50
Plymouth, . .	12,768	67	386	107	2,848-10	8-18	1	64 82	32 42	129,790 26
Suffolk, . . .	62,236	208	1,117	501	5,477	10-2	-	180 50	56 16	1,438,205 09
Worcester, . .	38,816	175	1,107	213	7,530-8	8-3	6	70 67	34 29	408,000 05
Total, . .	296,375	1,176	7,544	1,898	48,600-8	8-15	49	$82 22	$34 30	$4,331,675 85

RECAPITULATION—Continued.

COUNTIES.	Amount of board, fuel, etc., voluntarily contributed for Public Schools.	Expenses of superintendence by School Committee, including the salary of Superintendent.	Expenses of printing Reports, etc.	Salary of Superintendent of Public Schools.	Am't of School Funds, the income of which can be appropriated only for the support of Academies and Schools.	Income from local School Funds.	Income of Funds, appropriated to Public Schools at the option of the town, including tax on Dogs.
Barnstable, . .	$121 00	$2,160 93	$434 00	$725 00	$30,300 00	$1,850 00	$1,010 35
Berkshire, . .	1,141 73	2,921 41	531 75	-	19,215 35	1,348 81	1,728 69
Bristol, . . .	176 00	9,560 95	1,012 29	6,640 00	77,900 00	5,149 00	4,449 51
Dukes, . . .	-	351 75	119 63	-	114 02	-	78 24
Essex, . . .	200 00	14,840 20	2,931 48	7,545 00	459,708 75	30,282 58	6,699 69
Franklin, . .	1,240 69	2,750 46	368 50	74 75	46,538 83	3,302 33	1,669 84
Hampden, . .	341 00	8,020 94	437 50	5,025 00	181,773 77	11,604 88	2,939 79
Hampshire, . .	1,646 00	3,539 37	695 55	1,042 00	239,813 54	15,867 70	2,377 86
Middlesex, . .	97 00	25,019 79	3,379 35	15,665 67	171,874 85	11,150 83	5,967 28
Nantucket, . .	-	-	29 00	-	40,000 00	2,500 00	-
Norfolk, . . .	-	8,407 03	842 10	4,555 00	182,056 62	12,633 31	4,778 68
Plymouth, . .	12 00	4,849 61	1,119 71	1,346 00	191,313 50	11,773 11	4,012 42
Suffolk, . . .	-	33,598 35	1,801 49	6,500 00	45,587 46	1,404 17	16,972 40
Worcester, . .	304 56	15,783 60	2,074 36	5,400 00	212,694 50	11,101 54	6,544 36
Total, . .	$5,279 98	$131,804 39	$15,776 71	$54,518 42	$1,898,891 19	$119,968 26	$59,229 11

RECAPITULATION—CONCLUDED.

COUNTIES.	HIGH SCHOOLS.				INCORP. ACADEMIES.			UNINCORP. ACADEMIES AND PRIVATE SCHOOLS.			Town's share of School Fund, payable January 25, 1876.	How much of said Fund was used for apparatus and books of reference.
	Number.	No. of Teachers.	No. of Scholars.	Aggregate paid for Salaries of Principal.	Number.	Average No. of Scholars.	Aggregate paid for Tuition.	Number.	Average No. of Scholars.	Aggregate paid for Tuition.		
Barnstable, . .	10	15	479	$9,035 00	1	29	$360 00	5	85	$525 00	$3,361 45	$87 00
Berkshire, . .	11	20	631	12,192 33	1	20	600 00	18	487	24,275 00	7,675 10	181 17
Bristol, . . .	10	33	1,280	12,173 33	3	258	29,080 89	40	1,444	9,376 00	3,846 67	150 00
Dukes, . . .	1	2	48	675 00	1	38	128 00	2	55	65 00	1,060 59	85 00
Essex, . . .	28	80	2,618	37,208 39	4	460	24,906 66	53	2,579	19,378 00	7,172 94	202 00
Franklin, . .	8	14	392	6,247 00	2	104	930 00	12	317	2,552 00	5,943 07	224 33
Hampden, . .	9	31	1,059	14,407 00	2	765	11,050 00	19	2,054	14,425 00	4,876 45	211 84
Hampshire, . .	13	25	784	11,862 00	4	572	15,960 44	8	172	3,117 33	5,426 04	217 66
Middlesex, . .	38	109	3,964	54,751 41	9	608	24,260 00	54	2,453	47,023 58	11,297 94	849 09
Nantucket, . .	1	2	57	1,500 00	1	112	800 00	-	-	-	219 57	-
Norfolk, . . .	21	41	1,354	27,460 00	2	270	14,370 00	25	453	10,440 00	5,294 88	657 67
Plymouth, . .	16	35	1,199	19,480 00	4	173	2,830 00	17	295	2,873 20	6,377 44	269 35
Suffolk, . . .	10	102	2,308	36,100 00	4	-	-	97	2,949	280,875 00	362 80	29 40
Worcester, . .	40	85	2,987	43,673 63	6	530	6,417 00	35	1,885	24,678 00	13,405 13	1,163 52
Total, . .	216	594	19,160	$286,765 09	44	3,939	$131,692 99	385	15,228	$439,603 11	$76,320 07	$4,328 03

EVENING SCHOOLS.

CITIES AND TOWNS.	No. of Schools.	ATTENDANCE.			TIME.	No. of Teachers.	Expense.
		Males.	Females.	Average.	Number of Evenings.		
Boston,	22	3,727†	–	1,836	127	164	$49,494 89
Brookline,	1	28	20	8	4‡	2	500 00
Cambridge,	6	500	254	290	47	39	4,000 00
Cambridge,	3*	61	54	47	50	3	1,200 00
Canton,	2	67	67	54	36	4	257 81
Chelsea,	1	127	103	52	129	2	457 50
Chicopee,	1	35	35	20	72	1	250 00
Chicopee,	1*	20	12	20	12	1	110 00
Fall River,	2	120	7	84	76	8	625 50
Fitchburg,	2	100	50	80	70	10	400 00
Gloucester,	1*	12	18	18	25	1	400 00
Greenfield,	1	38	26	44	50	2	112 50
Haverhill,	2*	178	150	162	49	17	1,153 10
Holyoke,	5	208	109	201	40	9	798 77
Hyde Park,	2	61	41	21	64	3	396 63
Lawrence,	1	232	257	125	–	12	2,000 00
Leicester,	2	52	–	26	14	1	74 00
Leominster,	1	18	10	19	20	5	60 00
Lowell,	4	797	481	541	55	57	4,002 99
Lynn,	1*	45	45	30	68	2	1,050 00
Medford,	1	34	12	18	45	2	304 00
New Bedford,	2	215	155	115	66	–	1,200 00
Newburyport,	2	110	–	56	–	–	–
Newton,	1	74	12	44	46	5	589 64
Northampton,	3	116	48	62	55	4	260 00
Peabody,	1	30	–	20	–	2	240 00
Salem,	5	358	189	346	5§	22	2,753 99
Somerville,	1	185	66	97	88	6	1,100 00
Springfield,	2	232	177	140	60	12	497 00
Stoneham,	1	41	30	29	34	3	191 43
Stoneham,	1*	43	–	33	16	1	50 82
Taunton,	2	380	84	287	50	19	1,700 12
Waltham,	2	35	30	25	86	4	335 05
Westfield,	1	25	17	30	20	3	15 00
Woburn,	1	40	16	40	14‖	2	175 00
Worcester,	5	430	180	285	73	17	1,594 79
	92	8,774	2,755	5,305	–	445	$78,350 53

* Drawing Schools.
† Both Males and Females.
‡ Evenings per week.
§ Months.
‖ Weeks.

RETURNS OF SCHOOLS IN STATE INSTITUTIONS, FOR THE YEAR ENDING JULY 31, 1877.

STATE INSTITUTIONS.	Number of Schools in the Institution.	Number of different Scholars of all ages during the year.	Average attendance during the year.	No. under 5 years of age attend'g School.	No. over 15 years of age attend'g School.	No. between 5 and 15 years of age remaining in the Institution, July 31, 1877.	No. of Teachers during the Year.		Wages of Teachers, per Month.		Length of each School in months.
							Males.	Females.	Males.	Females.	
State Primary School at Monson, .	8	920	393	40	20	391	–	8	–	$22 50	11
State Industrial School at Lancaster, .	3	125	83	–	103	17	–	3	–	29 17	12
State Reform School at Westborough,	7	496	339	–	234	35	2	5	$58 33	25 00	12

GRADUATED TABLES—First Series.

The following Table shows the sums appropriated by the several cities and towns in the State for the education of each child between five and fifteen years of age. The income of the Surplus Revenue, and of other funds held in a similar way, when appropriated to schools, is added to the sum raised by taxes, and these sums constitute the amount reckoned as appropriations. The income of such School Funds as were given and are held on the express condition that their income shall be appropriated to schools is not included. Such an appropriation of their income being necessary to retaining the funds, is no evidence of the liberality of those holding the trust. But if a town appropriates the income of any fund to its Public Schools, which may be so appropriated or not, at the option of the voters, or when the town has the legal right to use such income in defraying its ordinary expenses, then such an appropriation is as really a contribution to Common Schools as an equal sum raised by taxes. On this account the Surplus Revenue, and sometimes other funds, are to be distinguished from Local School Funds as generally held. The income of the one *may* be appropriated to schools or not, at the pleasure of the town; the income of the other *must* be appropriated to schools by the condition of the donation. Funds of the latter kind are usually donations made to furnish means of education in addition to those provided by a reasonable taxation. Committees are expected, in their annual returns, to make this distinction in relation to School Funds.

Voluntary contributions are not included in the amount which is divided in order to ascertain the sum appropriated to each child. In many towns such contributions, however liberal, are not permanent, and cannot be relied upon as a stated provision. They are often raised and applied to favor particular districts or schools, or classes of scholars, and not to benefit equally all that attend the Public Schools. Besides, the value of board and fuel gratuitously furnished is determined by the mere estimate of individuals, and is therefore uncertain; while the amount raised by taxes, being in money, has a fixed and definite value, and is a matter of record. Still, the contributions voluntarily made are exhibited in a separate column of the table, as necessary to a complete statement of the provision made by the towns for the education of their children.

The Table exhibits the rank of each city or town in the State, in respect to its liberality in the appropriation of money to its schools, as compared with other cities and towns, for the year 1876–77; also its rank in a similar scale for 1875–76. It presents the sum appropriated to each child between five and fifteen.

GRADUATED TABLES — (For the State) — First Series.

*Table showing the comparative amount of Money appropriated by the different Towns in the State, for the Education of each Child in the Town, between the ages of 5 and 15 years.**

For 1875-76.	For 1876-77.	TOWNS.	Sum appropriated by towns for each child between 5 and 15 yrs. of age.	Amount raised by taxes for the support of Schools.	Income of Funds, with Dog Tax, appropriated to Schools.	TOTAL.	No. of Children between 5 and 15 years of age.	Amount contributed for board and fuel.
1	1	NAHANT, ...	$41 66.7	$3,500 00	–	–	84	–
2	2	Brookline, ...	32 35.3	38,500 00	–	–	1,190	–
9	3	Milton, ...	28 57	12,000 00	–	–	420	–
4	4	Newton, ...	26 03.8	73,311 11	$975 17	$74,286 28	2,853	–
3	5	Arlington, ...	25 90.6	20,000 00	–	–	772	–
7	6	Boston, ...	23 78.1	1,377,711 01	16,752 70	1,394,463 71	58,636	–
14	7	Winchester, ...	23 43.7	12,000 00	–	–	512	–
20	8	Swampscott, ...	21 91	7,800 00	–	–	356	–
5	9	Watertown, ...	21 65.2	18,858 62	–	–	871	–
8	10	Cambridge, ...	21 37	175,615 48	–	–	8,218	–
15	11	Lancaster, ...	21 20.1	6,000 00	–	–	283	–
6	12	Medford, ...	20 28.8	24,447 00	–	–	1,205	–
12	13	Springfield, ...	19 97	108,000 00	–	–	5,408	–
10	14	Belmont, ...	19 90.1	8,000 00	–	–	402	–
26	15	Concord, ...	19 13.6	8,554 04	–	–	447	–
13	16	Weston, ...	18 73	3,764 80	–	–	201	–
18	17	Somerville, ...	18 33.9	73,871 83	–	–	4,028	–
16	18	Walpole, ...	18 29.2	6,000 00	–	–	328	–

---

* Compare the rank of towns in this Table with their rank in the next or Second Series of Tables, showing the percentage of taxable property appropriated for Schools.

Showing the comparative amount of Money appropriated by the different Towns in the State — Continued.

For 1875-76.	For 1876-77.	TOWNS.	Sum appropriated by towns for each child between 5 and 15 yrs. of age.	Amount raised by taxes for the support of Schools.	Income of Funds, with Dog Tax, appropriated to Schools.	TOTAL.	No. of Children between 5 and 15 years of age.	Amount contributed for board and fuel.
23	19	Dedham, ...	$18 08.3	$20,488 50	–	–	1,133	–
11	20	Lexington, ...	18 03.6	9,000 00	–	–	499	–
21	21	Malden, ...	17 80.3	35,000 00	–	–	1,966	–
22	22	Reading, ...	17 63.5	8,500 00	–	–	482	–
30	23	Melrose, ...	17 48.9	14,254 00	–	–	815	–
69	24	Greenfield, ...	17 46.1	10,000 00	$441 45	$10,441 45	598	–
19	25	Haverhill, ...	17 41.9	45,000 00	430 00	45,430 00	2,608	–
17	26	Chelsea, ...	17 41.6	55,194 08	–	–	3,169	–
31	27	New Bedford, . . .	17 36.9	68,762 06	751 45	69,513 51	4,002	–
34	28	Boxborough, . . .	17 07.8	825 93	62 13	888 06	52	–
37	29	Needham, ...	16 73.6	13,500 00	575 19	14,075 19	841	–
28	30	Waltham, ...	16 55.7	29,101 34	468 86	29,570 20	1,786	–
24	31	Peabody, ...	16 46.2	22,525 00	835 36	23,360 36	1,419	–
36	32	Salem,.	16 38	71,030 73	1,529 34	72,560 07	4,430	–
44	33	Fitchburg, ...	16 30.4	36,000 00	–	–	2,208	–
39	34	Norwood, ...	16 29.1	6,500 00	–	–	399	–
117	35	Winthrop, ...	16 13.6	1,800 00	87 90	1,887 90	117	–
91	36	Medfield, ...	15 87.2	2,300 00	144 28	2,444 28	154	–
25	37	Everett, ...	15 78.2	11,000 00	–	–	697	–
51	38	Barre, ...	15 55	5,367 67	183 60	5,551 27	357	–
32	39	Framingham, . . .	15 51.3	13,750 00	801 60	14,551 60	938	–
53	40	Shelburne, ...	15 30.7	3,500 00	311 46	3,811 46	249	–
35	41	Stoneham, ...	15 25.1	14,000 00	–	–	918	–
33	42	Lincoln, ...	15 22.8	2,000 00	77 76	2,077 76	136	–
42	43	North Andover, . . .	15 18	8,000 00	–	–	527	–
57	44	Kingston, ...	14 98.9	3,200 00	127 63	3,327 63	222	–

58	45	Longmeadow, ...	$14 98.4	$3,583 28	$192 70	$3,775 98	252	–
49	46	Quincy, ...	14 97	25,000 00	–	–	1,670	–
40	47	Hingham, ...	14 81.7	11,735 49	–	–	792	–
43	48	Lowell, ...	14 76.9	109,293 00	–	–	7,400	–
–	49	Merrimac, ...	14 72.4	4,800 00	–	–	326	–
27	50	Westfield, ...	14 67.8	19,800 00	734 62	20,534 62	1,399	$51 00
46	51	Bradford, ...	14 55	5,500 00	–	–	378	–
70	52	Worcester, ...	14 38.4	126,600 07	–	–	8,801	–
142	53	Greenwich, ...	14 10.2	1,100 00	–	–	78	–
79	54	Wrentham, ...	14 08.5	5,500 00	260 96	5,760 96	409	–
38	55	South Hadley, . . .	14 04.8	8,500 00	182 00	8,682 00	618	–
107	56	Sandwich, ...	13 80.4	8,350 00	222 54	8,572 54	621	100 00
68	57	Northborough, . . .	13 80	3,200 00	–	–	232	67 06
48	58	Lynn, ...	13 68.4	81,066 26	–	–	5,924	–
61	59	Holbrook, ...	13 63	5,000 00	152 33	5,152 33	378	–
45	60	Falmouth, ...	13 51.8	4,500 00	168 98	4,668 98	338	–
83	61	Dracut, ...	13 30.3	2,400 00	180 85	2,580 85	194	–
272	62	Hull, ...	13 15.8	750 00	–	–	57	–
129	63	Athol, ...	13 02.1	7,442 00	305 51	7,747 83	595	–
89	64	Beverly, ...	12 97.1	17,000 00	277 12	17,277 12	1,332	–
64	65	Plymouth, ...	12 96	15,500 00	–	–	1,196	–
55	66	Saugus, ...	12 90.3	6,000 00	–	–	465	–
76	67	Littleton, ...	12 88.8	2,100 00	142 50	2,242 50	174	–
54	68	New Braintree, . . .	12 80.6	1,400 00	70 96	1,470 96	107	–
67	69	Georgetown, . . .	12 79.7	4,500 00	171 00	4,671 00	365	–
74	70	Bridgewater, . . .	12 74.3	8,700 00	386 00	9,086 00	713	–
85	71	Sherborn, ...	12 74	2,000 00	63 93	2,063 93	162	–
82	72	Canton, ...	12 72.5	11,400 00	612 82	12,012 82	944	–
98	73	Groton, ...	12 64.9	5,000 00	249 41	5,249 41	415	–
41	74	Sudbury, ...	12 62.3	2,400 00	112 00	2,512 00	199	–
62	75	Barnstable, ...	12 58.9	9,500 00	268 88	9,768 88	776	–
119	76	Newburyport, . . .	12 57.2	28,368 78	620 60	28,989 38	2,505	–

Showing the comparative amount of Money appropriated by the different Towns in the State—Continued.

For 1875–76.	For 1876–77.	TOWNS.	Sum appropriated by towns for each child between 5 and 15 yrs. of age.	Amount raised by taxes for the support of Schools.	Income of Funds, with Dog Tax, appropriated to Schools.	TOTAL.	No. of Children between 5 and 15 years of age.	Amount contributed for board and fuel.
96	77	Hyde Park,	$12 54.1	$15,400 00	-	-	1,228	-
29	78	Fairhaven,	12 53.6	5,614 00	$152 62	$5,766 62	460	-
47	79	Woburn,	12 53.4	27,550 21	-	-	2,198	-
122	80	Upton,	12 42.8	4,026 78	-	-	324	-
60	81	Yarmouth,	12 35	4,250 00	84 96	4,334 96	351	-
52	82	Stockbridge,	12 32.9	4,500 00	-	-	365	-
72	83	Wellfleet,	12 19.5	5,000 00	-	-	400	-
169	84	West Springfield,	12 16	8,195 59	-	-	674	$48 00
63	85	Southborough,	12 13.7	4,500 00	99 88	4,599 88	379	-
121	86	Petersham,	12 10.3	2,250 00	110 00	2,360 00	195	-
56	87	Foxborough,	12 04.8	6,000 00	-	-	498	-
75	88	Northampton,	12 03.7	25,000 00	602 97	25,602 97	2,127	-
123	89	Brockton,	12 01.4	22,975 00	345 16	23,320 16	1,941	-
88	90	Weymouth,	11 94.1	22,500 00	1,155 89	23,655 89	1,981	-
157	91	Swansea,	11 90.4	2,475 98	-	-	208	-
116	92	Sterling,	11 89.9	3,200 00	191 27	3,391 27	285	-
132	93	Carlisle,	11 89	800 00	91 77	891 77	75	-
95	94	Tewksbury,	11 87.2	2,200 00	174 42	2,374 42	200	-
80	95	Wakefield,	11 84.1	12,000 00	468 86	12,468 86	1,053	-
153	96	East Bridgewater,	11 80	5,050 00	229 24	5,279 24	444	-
90	97	Holliston,	11 73.7	6,300 00	249 41	6,549 41	558	-
112	98	Taunton,	11 71.5	42,550 00	-	-	3,632	-
92	99	Shirley,	11 71.4	2,500 00	135 66	2,635 66	225	-
78	100	Revere,	11 56.6	3,500 00	131 80	3,631 80	314	-
66	101	Bedford,	11 56	1,800 00	130 53	1,930 53	167	-
73	102	Amherst,	11 54.1	7,261 00	136 97	7,397 97	641	75 00

87	103	Halifax, ...	$11 53.8	$900 00	-	-	78	-
167	104	North Reading, . . .	11 53.8	1,800 00	-	-	156	-
196	105	Ashby, ...	11 47.8	1,642 69	$113 47	$1,756 16	153	$35 00
59	106	Brookfield, ...	11 44.7	4,600 00	288 15	4,888 15	427	-
134	107	Fall River, ...	11 40	97,000 00	-	-	8,509	-
65	108	Cohasset, ...	11 39.5	5,000 00	219 05	5,219 05	458	-
84	109	Ipswich, ...	11 35	6,000 00	254 13	6,254 13	551	-
108	110	Lakeville, ...	11 32.2	2,179 77	130 00	2,309 77	204	-
94	111	Gloucester, ...	11 22.9	40,720 00	725 11	41,445 11	3,691	-
234	112	Easthampton, . . .	11 22.7	7,000 00	151 99	7,151 99	637	-
136	113	Orleans, ...	11 20.7	2,500 00	21 69	2,521 69	225	-
86	114	Leicester, ...	11 14.1	5,600 00	416 57	6,016 57	540	-
93	115	Burlington, ...	11 03.2	1,000 00	92 16	1,092 16	99	-
127	116	Lawrence, ...	11 00.5	62,000 00	-	-	5,634	-
102	117	Dover, ...	10 99.2	1,200 00	119 00	1,319 00	120	-
139	118	Andover, ...	10 95.7	9,500 00	-	-	867	-
71	119	Lunenburg, ...	10 91.2	1,800 00	66 04	1,866 04	171	28 50
178	120	Rutland, ...	10 87.1	2,050 00	59 00	2,109 00	194	-
192	121	Boxford, ...	10 85	1,000 00	204 38	1,204 38	111	-
138	122	Ashland, ...	10 83.7	4,400 00	-	-	406	-
50	123	Nantucket, ...	10 76.1	6,500 00	-	-	604	-
133	124	Rehoboth, ...	10 71.8	3,200 00	294 00	3,494 00	326	-
111	125	Manchester, . . .	10 64.6	2,800 00	-	-	263	-
155	126	Granby, ...	10 63.8	1,500 00	-	-	141	-
183	127	Randolph, ...	10 61.7	8,600 00	-	-	810	-
131	128	Shrewsbury, . . .	10 60.1	3,000 00	-	-	283	-
143	129	Salisbury, ...	10 60	7,000 00	186 57	7,186 57	678	-
220	130	Dalton, ...	10 56.3	3,000 00	-	-	284	-
135	131	Stoughton, ...	10 55.6	11,000 00	-	-	1,042	-
114	132	Leominster, ...	10 54.4	8,509 25	-	-	807	-
146	133	Franklin, ...	10 52.6	6,000 00	-	-	570	-
101	134	Chelmsford, . . .	10 50.8	5,000 00	285 57	5,285 57	503	-

Showing the comparative amount of Money appropriated by the different Towns in the State—Continued.

For 1875-76.	For 1876-77.	TOWNS.	Sum appropriated by towns for each child between 5 and 15 yrs. of age.	Amount raised by taxes for the support of Schools.	Income of Funds, with Dog Tax, appropriated to Schools.	TOTAL.	No. of Children between 5 and 15 years of age.	Amount contributed for board and fuel.
170	135	Methuen, ...	$10 47.9	$7,000 00	-	-	668	-
158	136	Attleborough, . . .	10 47.7	15,000 00	$800 00	$15,800 00	1,508	$130 00
118	137	Westminster, . . .	10 41.7	2,625 00	-	-	252	-
145	138	Seekonk, ...	10 41.6	2,000 00	-	-	192	-
115	139	Uxbridge, ...	10 41.5	6,300 00	220 00	6,520 00	626	-
186	140	Chicopee, ...	10 40.6	20,500 00	-	-	1,970	-
105	141	Danvers, ...	10 30.6	11,200 00	312 00	11,512 00	1,117	-
197	142	Gardner, ...	10 29.8	6,500 00	286 42	6,786 42	659	-
104	143	Wayland, ...	10 28.8	3,000 00	127 59	3,127 59	304	-
141	144	Paxton, ...	10 28.4	1,157 78	66 07	1,223 85	119	-
201	145	Brewster, ...	10 24	2,200 00	52 42	2,252 42	220	-
124	146	South Abington, . . .	10 23.7	4,500 00	209 55	4,709 55	462	-
203	147	Northfield, ...	10 15	2,500 00	189 80	2,689 80	265	-
173	148	Marshfield, ...	10 11.9	2,800 00	185 23	2,985 23	295	-
191	149	Northbridge, . . .	10 09	7,950 00	373 20	8,323 20	825	-
174	150	Edgartown, ...	10 08	3,500 00	78 24	3,578 24	355	-
156	151	Charlemont, . . .	10 00.3	1,500 00	70 50	1,570 50	157	-
120	152	Dunstable, ...	10 00	800 00	-	-	80	-
205	153	West Newbury, . . .	9 99.4	3,707 76	-	-	371	-
194	154	Templeton, ...	9 97.9	4,700 00	169 89	4,869 89	488	-
218	155	Clinton, ...	9 94.1	14,385 20	-	-	1,447	-
161	156	Acushnet, ...	9 93.2	1,800 00	107 00	1,907 00	192	-
163	157	Deerfield, ...	9 90	5,445 00	208 00	5,653 00	571	-
159	158	Westborough, . . .	9 89.1	7,775 00	-	-	786	-
188	159	Harvard, ...	9 87.6	2,400 00	-	-	243	-
106	160	Wilmington, . . .	9 87.3	1,550 00	89 00	1,639 00	166	-

225	161	Westford, ...	$9 83.6	$3,000 00	–	–	305	–
165	162	Orange, ...	9 82.3	3,900 00	–	–	397	$68 25
81	163	Boylston, ...	9 81.8	1,525 00	$85 19	$1,610 19	164	35 00
222	164	Gosnold, ...	9 78.3	225 00	–	–	23	–
152	165	Montague, ...	9 74	6,000 00	–	–	616	–
223	166	Amesbury, ...	9 73.3	6,200 00	–	–	637	–
97	167	Braintree, ...	9 73.2	6,800 00	411 06	7,211 06	741	–
243	168	Provincetown, . . .	9 65.7	7,600 00	–	–	787	21 00
126	169	Tyngsborough, . . .	9 63.3	1,050 00	–	–	109	–
109	170	Bellingham, . . .	9 60.9	1,800 00	275 71	2,075 71	216	–
172	171	Conway, ...	9 57.4	2,700 00	–	–	282	60 00
150	172	Charlton, ...	9 55.4	3,000 00	–	–	314	–
199	173	Mattapoisett, . . .	9 53.5	2,100 00	93 00	2,193 00	230	–
240	174	Abington, ...	9 53	6,000 00	328 00	6,328 00	664	–
110	175	Warren, ...	9 52.4	5,000 00	–	–	525	–
227	176	Oxford, ...	9 50.4	4,600 00	–	–	484	–
175	177	Douglas, ...	9 48.6	4,000 00	287 72	4,287 72	452	–
190	178	Hubbardston, . . .	9 46.9	2,500 00	–	–	264	–
275	179	South Scituate, . . .	9 44.7	3,000 00	174 39	3,174 39	336	12 00
144	180	Easton, ...	9 40.7	7,000 00	459 98	7,459 98	793	40 00
233	181	Wareham, ...	9 39.2	5,500 00	267 00	5,767 00	614	–
219	182	Montgomery, . . .	9 38.1	500 00	44 12	544 12	58	30 00
149	183	Stow, ...	9 36.4	1,600 00	132 38	1,732 38	185	–
184	184	Dartmouth, ...	9 35.8	4,500 00	338 08	4,838 08	517	–
207	185	Mansfield, ...	9 35.5	4,500 00	–	–	481	–
215	186	Sturbridge, ...	9 35.4	3,657 56	–	–	391	–
137	187	Chatham, ...	9 33.6	4,500 00	56 24	4,556 24	488	–
206	188	Hanover, ...	9 30.1	3,000 00	125 00	3,125 00	336	–
217	189	Berkley, ...	9 28.8	1,000 00	96 00	1,096 00	118	6 00
204	190	Cheshire, ...	9 28.6	3,200 00	96 71	3,296 71	355	–
189	191	Acton, ...	9 20.9	2,500 00	225 72	2,725 72	296	–
278	192	Phillipston, ...	9 20	1,000 00	76 38	1,076 38	117	–

Showing the comparative amount of Money appropriated by the different Towns in the State—Continued.

For 1875-76.	For 1876-77.	TOWNS.	Sum appropriated by towns for each child between 5 and 15 yrs. of age.	Amount raised by taxes for the support of Schools.	Income of Funds, with Dog Tax, appropriated to Schools.	TOTAL.	No. of Children between 5 and 15 years of age.	Amount contributed for board and fuel.
128	193	Sunderland,	$9 17.5	$1,500 00	$23 00	$1,523 00	166	-
212	194	Wendell,	9 16.7	700 00	42 53	742 53	81	-
180	195	Lenox,	9 15.8	3,700 00	-	-	404	$200 00
255	196	Hawley,	9 13.6	1,132 90	-	-	124	-
244	197	Webster,	9 13.6	6,200 00	268 30	6,468 30	708	-
198	198	Townsend,	9 11.4	3,500 00	-	-	384	62 00
148	199	Heath,	9 09.1	1,000 00	-	-	110	15 00
208	200	Dighton,	9 08.8	2,500 00	180 92	2,680 92	295	-
248	201	Middleborough,	9 08.1	8,000 00	-	-	881	-
228	202	Mendon,	9 03.8	1,700 00	243 32	1,943 32	215	-
179	203	Hopkinton,	9 02.9	9,000 00	453 89	9,453 89	1,047	-
259	204	Norton,	9 00.9	1,800 00	470 37	2,270 37	252	-
224	205	Tisbury,	9 00.9	2,000 00	-	-	222	-
113	206	Pittsfield,	8 98.4	23,000 00	-	-	2,558	-
166	207	Marblehead,	8 93.9	13,500 00	481 42	13,981 42	1,564	200 00
318	208	Groveland,	8 92.8	3,000 00	-	-	336	-
171	209	Medway,	8 91.8	7,000 00	437 50	7,437 50	834	-
103	210	Raynham,	8 89.6	2,500 00	230 95	2,730 95	307	-
185	211	Natick,	8 89.4	14,000 00	-	-	1,574	-
164	212	North Brookfield,	8 89.2	6,500 00	266 87	6,766 87	761	100 00
241	213	Billerica,	8 84.5	3,000 00	210 90	3,210 90	363	-
77	214	Lynnfield,	8 82.6	1,000 00	76 82	1,076 82	122	-
100	215	Pepperell,	8 82.4	3,000 00	-	-	340	-
140	216	Truro,	8 82.3	1,650 00	-	-	187	-
232	217	Dennis,	8 79.2	5,500 00	21 69	5,521 69	628	-
151	218	Great Barrington,	8 72.3	7,500 00	290 13	7,790 13	893	-

147	219	Agawam,	$8 72	$3,000 00	$209 00	$3,209 00	368	$20 00
237	220	Erving,	8 71.5	1,200 00	72 35	1,272 35	146	–
226	221	Palmer,	8 67.6	7,500 00	325 75	7,825 75	902	–
130	222	Huntington,	8 65.2	1,600 00	78 46	1,678 46	194	–
200	223	Hudson,	8 56.5	6,250 00	157 00	6,407 00	748	–
216	224	Wenham,	8 54.8	1,250 00	75 00	1,325 00	155	–
229	225	Lee,	8 52.3	7,100 00	–	–	833	50 00
236	226	Adams,	8 51.4	27,000 00	–	–	3,171	–
160	227	Ayer,	8 50.4	3,000 00	189 00	3,189 00	375	–
195	228	Princeton,	8 50	1,700 00	–	–	200	–
213	229	Dana,	8 45.4	800 00	53 86	853 86	101	–
286	230	Blandford,	8 45	1,200 00	304 00	1,504 00	178	7 00
177	231	Royalston,	8 41.3	1,500 00	90 09	1,590 09	189	–
209	232	Brimfield,	8 37.2	1,800 00	–	–	215	–
266	233	Ludlow,	8 37.2	1,800 00	–	–	215	–
210	234	Warwick,	8 33.3	1,000 00	–	–	120	10 00
214	235	West Bridgewater,	8 29.1	2,500 00	252 53	2,752 53	332	–
252	236	Rowley,	8 29	1,600 00	99 45	1,699 45	205	–
193	237	Marlborough,	8 28.1	16,000 00	–	–	1,932	–
295	238	Middleton,	8 21	1,400 00	118 92	1,518 92	185	–
154	239	Windsor,	8 20.4	800 00	45 00	845 00	103	64 00
292	240	Westhampton,	8 15.7	1,000 00	35 90	1,035 90	127	–
315	241	Ashfield,	8 10.8	1,750 00	50 00	1,800 00	222	533 50
267	242	Duxbury,	8 10.4	2,800 00	247 00	3,047 00	376	–
293	243	Belchertown,	8 07.7	3,500 00	134 97	3,634 97	450	–
256	244	Monson,	8 07.5	4,800 00	303 70	5,103 70	632	–
307	245	Pembroke,	8 06.2	1,800 00	86 56	1,886 56	234	–
211	246	Wilbraham,	8 04.7	3,100 00	191 42	3,291 42	409	–
298	247	Hanson,	8 03.5	1,600 00	87 44	1,687 44	210	–
260	248	Grafton,	8 01.7	6,750 00	–	–	842	–
263	249	Newbury,	7 99.5	1,700 00	98 92	1,798 92	225	–
99	250	Southampton,	7 99.2	1,450 00	68 48	1,518 48	190	–

Showing the comparative amount of Money appropriated by the different Towns in the State—Continued.

For 1875-76.	For 1876-77.	TOWNS.	Sum appropriated by towns for each child between 5 and 15 yrs. of age.	Amount raised by taxes for the support of Schools.	Income of Funds, with Dog Tax, appropriated to Schools.	TOTAL.	No. of Children between 5 and 15 years of age.	Amount contributed for board and fuel.
247	251	West Brookfield, . .	$7 97.9	$3,000 00	–	–	376	$48 00
125	252	Norfolk, ...	7 96.3	1,400 00	$97 15	$1,497 15	188	–
254	253	Cummington, . . .	7 91	1,200 00	33 91	1,233 91	156	–
271	254	Southbridge, . . .	7 86	9,000 00	–	–	1,145	–
329	255	Chesterfield, . . .	7 80.3	1,100 00	47 00	1,147 00	147	500 00
314	256	Russell, ...	7 75.7	800 00	61 00	861 00	111	–
249	257	Scituate, ...	7 69.6	3,500 00	147 97	3,647 97	474	–
279	258	Winchendon, . . .	7 69.4	5,693 46	–	–	740	–
269	259	Shutesbury, . . .	7 68.3	800 00	22 30	822 30	107	–
264	260	Hamilton, ...	7 67.7	1,000 00	82 54	1,082 54	141	–
250	261	Milford, ...	7 60.4	16,588 00	316 28	16,904 28	2,223	–
238	262	Ashburnham, . . .	7 59.7	3,000 00	122 40	3,122 40	411	–
276	263	Rockland, ...	7 57.6	7,000 00	333 73	7,333 73	968	–
268	264	Sharon, ...	7 56.3	1,800 00	317 74	2,117 74	280	–
239	265	Ware, ...	7 55.1	7,000 00	173 06	7,173 06	950	–
235	266	Enfield, ...	7 53.3	1,300 00	78 46	1,378 46	183	–
288	267	Millbury, ...	7 52.7	7,000 00	–	–	930	–
202	268	Carver, ...	7 47.9	1,500 00	25 68	1,525 68	204	–
280	269	Sheffield, ...	7 40.4	3,100 00	364 87	3,464 87	468	14 00
221	270	Essex, ...	7 39.6	2,500 00	–	–	338	–
270	271	Harwich, ...	7 38.9	5,000 00	112 95	5,112 95	692	–
308	272	Hinsdale, ...	7 38.4	2,400 00	–	–	325	–
302	273	Sandisfield, ...	7 36.1	1,500 00	82 72	1,582 72	215	173 00
296	274	Mashpee, ...	7 35.3	500 00	–	–	68	–
251	275	Westport, ...	7 34.3	3,500 00	568 14	4,068 14	554	–
168	276	Egremont, ...	7 34.1	1,000 00	64 47	1,064 47	145	63 00

176	277	Maynard, ...	$7 32.3	$2,500 00	$224 01	$2,724 01	$372	–
262	278	Alford, ...	7 27.3	400 00	–	–	55	–
245	279	Leverett, ...	7 23.2	828 06	47 04	875 10	121	–
258	280	Gill, ...	7 20.7	800 00	–	–	111	$243 76
181	281	Middlefield, . . .	7 19.6	900 00	–	–	143	–
289	282	Williamstown, . . .	7 18.2	5,200 00	–	–	724	–
303	283	Blackstone, ...	7 16	6,646 96	277 11	6,924 07	967	–
230	284	Freetown, ...	7 14.3	1,800 00	–	–	252	–
231	285	Dudley, ...	7 12.4	4,200 00	145 74	4,345 74	610	–
306	286	Holyoke, ...	7 10.7	21,200 00	–	–	2,983	–
257	287	Hadley, ...	7 09.2	3,000 00	–	–	423	–
246	288	Plainfield, ...	7 06.7	500 00	15 96	515 96	73	–
187	289	Eastham, ...	7 06	981 00	–	–	139	–
324	290	Worthington, . . .	7 04.4	800 00	228 42	1,028 42	146	860 00
291	291	Hardwick, ...	7 03	2,600 00	387 94	2,987 94	425	–
253	292	Granville, ...	6 95	1,800 00	139 02	1,939 02	279	36 00
242	293	Somerset, ...	6 92.3	2,700 00	–	–	390	–
274	294	Marion, ...	6 90	1,000 00	–	–	145	–
325	295	Tolland, ...	6 82.3	500 00	59 50	559 50	82	149 00
321	296	Plympton, ...	6 81.4	1,000 00	110 73	1,110 73	163	–
323	297	Bolton, ...	6 74.2	1,200 00	–	–	178	–
300	298	Rochester, ...	6 70.3	1,200 00	120 58	1,320 58	197	–
309	299	Hatfield, ...	6 66.7	2,000 00	86 70	2,086 70	313	–
265	300	Chester, ...	6 65.1	1,600 00	95 89	1,695 89	255	–
285	301	Whately, ...	6 60.4	1,400 00	–	–	212	–
282	302	New Salem, . . .	6 59.6	1,000 00	35 60	1,035 60	157	23 00
294	303	Oakham, ...	6 49.1	900 00	112 61	1,012 61	156	10 00
273	304	Pelham, ...	6 43	700 00	45 88	745 88	116	–
316	305	Bernardston, . . .	6 41	1,000 00	–	–	156	–
317	306	Washington, . . .	6 38.7	800 00	61 32	861 32	135	–
333	307	Wales, ...	6 32	800 00	97 47	897 47	142	–
313	308	Rowe, ...	6 28.6	700 00	41 81	741 81	118	–

Showing the comparative amount of Money appropriated by the different Towns in the State—Continued.

For 1875–76.	For 1876–77.	TOWNS.	Sum appropriated by towns for each child between 5 and 15 yrs. of age.	Amount raised by taxes for the support of Schools.	Income of Funds, with Dog Tax, appropriated to Schools.	TOTAL.	No. of Children between 5 and 15 years of age.	Amount contributed for board and fuel.
337	309	Williamsburg, ...	$6 28.6	$2,800 00	$116 69	$2,916 69	464	–
297	310	Holland, ...	6 25.7	350 00	37 96	387 96	62	–
283	311	Leyden, ...	6 25	700 00	–	–	112	–
327	312	Berlin, ...	6 18.3	1,100 00	117 99	1,217 99	197	–
284	313	Coleraine, ...	6 15.4	2,000 00	–	–	325	$287 18
182	314	Spencer, ...	6 14.3	6,500 00	–	–	1,058	–
338	315	Sutton, ...	6 02.8	3,800 00	190 94	3,990 94	662	–
301	316	Topsfield, ...	6 00.5	1,200 00	121 01	1,321 01	220	–
320	317	Southwick, ...	5 95.6	1,000 00	143 64	1,143 64	193	–
331	318	West Stockbridge, . .	5 91	2,500 00	–	–	423	–
277	319	Holden, ...	5 87.6	2,500 00	256 06	2,756 06	469	–
334	320	Tyringham, ...	5 82.1	600 00	52 00	652 00	112	106 00
281	321	Florida, ...	5 81.4	600 00	39 58	639 58	110	–
326	322	Otis, ...	5 80.7	1,100 00	84 78	1,184 78	204	27 00
299	323	Rockport, ...	5 77.6	4,580 00	–	–	793	–
162	324	Hancock, ...	5 60.4	628 50	44 00	672 50	120	–
319	325	Lanesborough, . . .	5 59.7	1,500 00	–	–	268	–
310	326	West Boylston, . . .	5 36	3,000 00	339 00	3,339 00	623	–
328	327	Monterey, ...	5 27.9	800 00	60 41	860 41	163	–
304	328	Auburn, ...	5 24.5	1,500 00	–	–	286	16 00
322	329	Mt. Washington, . . .	5 23.2	225 00	–	–	43	–
305	330	Goshen, ...	5 22.4	350 00	–	–	67	211 00
335	331	Becket, ...	5 10.7	1,500 00	114 00	1,614 00	316	130 00
261	332	Peru, ...	5 09.2	500 00	29 63	529 63	104	–
332	333	Buckland, ...	5 02.1	2,000 00	114 00	2,114 00	421	–
290	334	New Marlborough, . .	5 00.5	2,000 00	197 22	2,197 22	439	124 73

330	335	Chilmark, ...	$4 93.8	$400 00	–	–	81	–
311	336	Savoy, ...	4 65.1	600 00	–	–	129	$150 00
312	337	Prescott, ...	4 26.8	400 00	$31 04	$431 04	101	–
287	338	Monroe, ...	4 16.6	200 00	–	–	48	–
336	339	Clarksburg, ...	4 14.2	700 00	–	–	169	–
339	340	New Ashford, . . .	3 63.6	96 00	20 37	116 37	32	–
340	341	Richmond, ...	3 55.4	800 00	81 48	881 48	248	40 00
341	342	Gay Head, ...	–	–	–	–	–	–

GRADUATED TABLES — (County Tables) — First Series.

Table showing the comparative amount of Money appropriated by the different Towns in each of the Counties in the State, for the education of each Child in the Town, between the ages of 5 and 15 years.

BARNSTABLE COUNTY.

For 1875-76.	For 1876-77.	TOWNS.	Sum appropriated by towns for each child between 5 and 15 yrs. of age.	Amount raised by taxes for the support of Schools.	Income of Funds, with Dog Tax, appropriated to Schools.	TOTAL.	No. of Children between 5 and 15 years of age.	Amount contributed for board and fuel.
5	1	SANDWICH,	$13 80.4	$8,350 00	$222 54	$8,572 54	621	$100 00
1	2	Falmouth,	13 51.8	4,500 00	168 98	4,668 98	338	–
3	3	Barnstable,	12 58.9	9,500 00	268 88	9,768 88	776	–
2	4	Yarmouth,	12 35	4,250 00	84 96	4,334 96	351	–
4	5	Wellfleet,	12 19.5	5,000 00	–	–	410	–
6	6	Orleans,	11 20.7	2,500 00	21 69	2,521 69	225	–
10	7	Brewster,	10 24	2,200 00	52 42	2,252 42	220	–
12	8	Provincetown,	9 65.7	7,600 00	–	–	787	21 00
7	9	Chatham,	9 33.6	4,500 00	56 24	4,556 24	488	–
8	10	Truro,	8 82.3	1,650 00	–	–	187	–
11	11	Dennis,	8 79.2	5,500 00	21 69	5,521 69	628	–
13	12	Harwich,	7 38.9	5,000 00	112 95	5,112 95	692	–
14	13	Mashpee,	7 35.3	500 00	–	–	68	–
9	14	Eastham,	7 06	981 00	–	–	139	–

BERKSHIRE COUNTY.

For 1875-76.	For 1876-77.	TOWNS.	Sum appropriated by towns for each child between 5 and 15 yrs. of age.	Amount raised by taxes for the support of Schools.	Income of Funds, with Dog Tax, appropriated to Schools.	TOTAL.	No. of Children between 5 and 15 years of age.	Amount contributed for board and fuel.
1	1	STOCKBRIDGE,	$12 32.9	$4,500 00	–	–	365	–
9	2	Dalton,	10 56.3	3,000 00	–	–	284	–

8	3	Cheshire, ...	$9 28.6	$3,200 00	$96 71	$3,296 71	355	–
7	4	Lenox, ...	9 15.8	3,700 00	–	–	404	$200 00
2	5	Pittsfield, ...	8 98.4	23,000 00	–	–	2,558	–
3	6	Great Barrington, . .	8 72.3	7,500 00	290 13	7,790 13	893	–
10	7	Lee, ...	8 52.3	7,100 00	–	–	833	50 00
11	8	Adams, ...	8 51.4	27,000 00	–	–	3,171	–
4	9	Windsor, ...	8 20.4	800 00	45 00	845 00	103	64 00
14	10	Sheffield, ...	7 40.4	3,100 00	364 87	3,464 87	468	14 00
19	11	Hinsdale, ...	7 38.4	2,400 00	–	–	325	–
18	12	Sandisfield, ...	7 36.1	1,500 00	82 72	1,582 72	215	173 00
6	13	Egremont, ...	7 34.1	1,000 00	64 47	1,064 47	145	63 00
13	14	Alford, ...	7 27.3	400 00	–	–	55	–
16	15	Williamstown, . . .	7 18.2	5,200 00	–	–	724	–
21	16	Washington, . . .	6 38.7	800 00	61 32	861 32	135	–
26	17	West Stockbridge, . .	5 91	2,500 00	–	–	423	–
27	18	Tyringham, . . .	5 82.1	600 00	52 00	652 00	112	106 00
15	19	Florida, ...	5 81.4	600 00	39 58	639 58	110	–
24	20	Otis, ...	5 80.7	1,100 00	84 78	1,184 78	204	27 00
5	21	Hancock, ...	5 60.4	628 50	44 00	672 50	120	–
22	22	Lanesborough, . . .	5 59.7	1,500 00	–	–	268	–
25	23	Monterey, ...	5 27.9	800 00	60 41	860 41	163	–
23	24	Mt. Washington, . . .	5 23.2	225 00	–	–	43	–
28	25	Becket, ...	5 10.7	1,500 00	114 00	1,614 00	316	130 00
12	26	Peru, ...	5 09.2	500 00	29 63	529 63	104	–
17	27	New Marlborough, . .	5 00.5	2,000 00	197 22	2,197 22	439	124 73
20	28	Savoy, ...	4 65.1	600 00	–	–	129	150 00
29	29	Clarksburg, ...	4 14.2	700 00	–	–	169	–
30	30	New Ashford, . . .	3 63.6	96 00	20 37	116 37	32	–
31	31	Richmond, ...	3 55.4	800 00	81 48	881 48	248	40 00

BRISTOL COUNTY.

For 1875-76.	For 1876-77.	TOWNS.	Sum appropriated by towns for each child between 5 and 15 yrs. of age.	Amount raised by taxes for the support of Schools.	Income of Funds, with Dog Tax, appropriated to Schools.	TOTAL.	No. of Children between 5 and 15 years of age.	Amount contributed for board and fuel.
2	1	NEW BEDFORD,	$17 36.9	$68,762 06	$751 45	$69,513 51	4,002*	-
1	2	Fairhaven,	12 53.6	5,614 00	152 62	5,766 62	460	-
9	3	Swansea,	11 90.4	2,475 98	-	-	208	-
4	4	Taunton,	11 71.5	42,550 00	-	-	3,632	-
6	5	Fall River,	11 40	97,000 00	-	-	8,509	-
5	6	Rehoboth,	10 71.8	3,200 00	294 00	3,494 00	326	-
10	7	Attleborough,	10 47.7	15,000 00	800 00	15,800 00	1,508	$130 00
8	8	Seekonk,	10 41.6	2,000 00	-	-	192	-
11	9	Acushnet,	9 93.2	1,800 00	107 00	1,907 00	192	-
7	10	Easton,	9 40.7	7,000 00	459 98	7,459 98	793	40 00
12	11	Dartmouth,	9 35.8	4,500 00	338 08	4,838 08	517	-
13	12	Mansfield,	9 35.5	4,500 00	-	-	481	-
15	13	Berkley,	9 28.8	1,000 00	96 00	1,096 00	118	6 00
14	14	Dighton,	9 08.8	2,500 00	180 92	2,680 92	295	-
19	15	Norton,	9 00.9	1,800 00	470 37	2,270 37	252	-
3	16	Raynham,	8 89.6	2,500 00	230 95	2,730 95	307	-
18	17	Westport,	7 34.3	3,500 00	568 14	4,068 14	554	-
16	18	Freetown,	7 14.3	1,800 00	-	-	252	-
17	19	Somerset,	6 92.3	2,700 00	-	-	390	-

DUKES COUNTY.

For 1875-76.	For 1876-77.	TOWNS.	Sum appropriated by towns for each child between 5 and 15 yrs. of age.	Amount raised by taxes for the support of Schools.	Income of Funds, with Dog Tax, appropriated to Schools.	TOTAL.	No. of Children between 5 and 15 years of age.	Amount contributed for board and fuel.
1	1	EDGARTOWN,	$10 08	$3,500 00	$78 24	$3,578 24	355	-
2	2	Gosnold,	9 78.3	225 00	-	-	23	-

3	3	Tisbury,	$9 00.9	$2,000 00	–	–	222	–
4	4	Chilmark,	4 93.8	400 00	–	–	81	–
5	5†	Gay Head,	–	–	–	–	–	–

ESSEX COUNTY.

1	1	NAHANT,	$41 66.7	$3,500 00	–	–	84	–
3	2	Swampscott,	21 91	7,800 00	–	–	356	–
2	3	Haverhill,	17 41.9	45,000 00	$430 00	$45,430 00	2,608	–
4	4	Peabody,	16 46.2	22,525 00	835 36	23,360 36	1,419	–
5	5	Salem,	16 38	71,030 73	1,529 34	72,560 07	4,430	–
6	6	North Andover,	15 18	8,000 00	–	–	527	–
–	7	Merrimac,	14 72.4	4,800 00	–	–	326	–
7	8	Bradford,	14 55	5,500 00	–	–	378	–
8	9	Lynn,	13 68.4	81,066 26	–	–	5,924	–
13	10	Beverly,	12 97.1	17,000 00	277 12	17,277 12	1,332	–
9	11	Saugus,	12 90.3	6,000 00	–	–	465	–
10	12	Georgetown,	12 79.7	4,500 00	171 00	4,671 00	365	–
17	13	Newburyport,	11 57.2	28,368 78	620 60	28,989 38	2,505	–
12	14	Ipswich,	11 35	6,000 00	254 13	6,254 13	551	–
14	15	Gloucester,	11 22.9	40,720 00	725 11	41,445 11	3,691	–
18	16	Lawrence,	11 00.5	62,000 00	–	–	5,634	–
19	17	Andover,	10 95.7	9,500 00	–	–	867	–
23	18	Boxford,	10 85	1,000 00	204 38	1,204 38	111	–
16	19	Manchester,	10 64.6	2,800 00	–	–	263	–
20	20	Salisbury,	10 60	7,000 00	186 57	7,186 57	678	–
22	21	Methuen,	10 47.9	7,000 00	–	–	668	–
15	22	Danvers,	10 30.6	11,200 00	312 00	11,512 00	1,117	–
24	23	West Newbury,	9 99.4	3,707 76	–	–	371	–

* By Census taken November, 1875.

† No taxation this year.

ESSEX COUNTY—CONCLUDED.

For 1875-76.	For 1876-77.	TOWNS.	Sum appropriated by towns for each child between 5 and 15 yrs. of age.	Amount raised by taxes for the support of Schools.	Income of Funds, with Dog Tax, appropriated to Schools.	TOTAL.	No. of Children between 5 and 15 years of age.	Amount contributed for board and fuel.
27	24	Amesbury,	$9 73.3	$6,200 00	-	-	637	-
21	25	Marblehead,	8 93.9	13,500 00	$481 42	$13,981 42	1,564	$200 00
34	26	Groveland,	8 92.8	3,000 00	-	-	336	-
11	27	Lynnfield,	8 82.6	1,000 00	76 82	1,076 82	122	-
25	28	Wenham,	8 54.8	1,250 00	75 00	1,325 00	155	-
28	29	Rowley,	8 29	1,600 00	99 45	1,699 45	205	-
31	30	Middleton,	8 21	1,400 00	118 92	1,518 92	185	-
29	31	Newbury,	7 99.5	1,700 00	98 92	1,798 92	225	-
30	32	Hamilton,	7 67.7	1,000 00	82 54	1,082 54	141	-
26	33	Essex,	7 39.6	2,500 00	-	-	338	-
33	34	Topsfield,	6 00.5	1,200 00	121 01	1,321 01	220	-
32	35	Rockport,	5 77.6	4,580 00	-	-	793	-

FRANKLIN COUNTY.

For 1875-76.	For 1876-77.	TOWNS.	Sum appropriated by towns for each child between 5 and 15 yrs. of age.	Amount raised by taxes for the support of Schools.	Income of Funds, with Dog Tax, appropriated to Schools.	TOTAL.	No. of Children between 5 and 15 years of age.	Amount contributed for board and fuel.
2	1	GREENFIELD,	$17 46.1	$10,000 00	$441 45	$10,441 45	598	-
1	2	Shelburne,	15 30.7	3,500 00	311 46	3,811 46	249	-
10	3	Northfield,	10 15	2,500 00	189 80	2,689 80	265	-
6	4	Charlemont,	10 00.3	1,500 00	70 50	1,570 50	157	-
7	5	Deerfield,	9 90	5,445 00	208 00	5,653 00	571	-
8	6	Orange,	9 82.3	3,900 00	-	-	397	$68 25
5	7	Montague,	9 74	6,000 00	-	-	616	-
9	8	Conway,	9 57.4	2,700 00	-	-	282	60 00
3	9	Sunderland,	9 17.5	1,500 00	23 00	1,523 00	166	-

12	10	Wendell, ...	$9 16.7	$700 00	$42 53	$742 53	81	-
15	11	Hawley, ...	9 13.6	1,132 90	-	-	124	-
4	12	Heath, ...	9 09.1	1,000 00	-	-	110	$15 00
13	13	Erving, ...	8 71.5	1,200 00	72 35	1,272 35	146	-
11	14	Warwick, ...	8 33.3	1,000 00	-	-	120	10 00
24	15	Ashfield, ...	8 10.8	1,750 00	50 00	1,800 00	222	533 50
17	16	Shutesbury, . . .	7 68.5	800 00	22 30	822 30	107	-
14	17	Leverett, ...	7 23.2	828 06	47 04	875 10	121	-
16	18	Gill, ...	7 20.7	800 00	-	-	111	243 76
21	19	Whately, ...	6 60.4	1,400 00	-	-	212	-
18	20	New Salem, . . .	6 59.6	1,000 00	35 60	1,035 60	157	23 00
25	21	Bernardston, . . .	6 41	1,000 00	-	-	156	-
23	22	Rowe, ...	6 28.6	700 00	41 81	741 81	118	-
19	23	Leyden, ...	6 25	700 00	-	-	112	-
20	24	Coleraine, ...	6 15.4	2,000 00	-	-	325	287 18
26	25	Buckland, ...	5 02.1	2,000 00	114 00	2,114 00	421	-
22	26	Monroe, ...	4 16.6	200 00	-	-	48	-

HAMPDEN COUNTY.

1	1	SPRINGFIELD, ...	$19 97	$108,000 00	-	-	5,408	-
3	2	Longmeadow, . . .	14 98.4	3,583 28	$192 70	$3,775 98	252	-
2	3	Westfield, ...	14 67.8	19,800 00	734 62	20,534 62	1,399	$51 00
5	4	West Springfield, . .	12 16	8,195 59	-	-	674	48 00
6	5	Chicopee, ...	10 40.6	20,500 00	-	-	1,970	-
9	6	Montgomery, . . .	9 38.1	500 00	44 12	544 12	58	30 00
4	7	Agawam, ...	8 72	3,000 00	209 00	3,209 00	368	20 00
10	8	Palmer, ...	8 67.6	7,500 00	325 75	7,825 75	902	-
15	9	Blandford, ...	8 45	1,200 00	304 00	1,504 00	178	7 00
7	10	Brimfield, ...	8 37.2	1,800 00	-	-	215	-

HAMPDEN COUNTY—CONCLUDED.

For 1875–76.	For 1876–77.	TOWNS.	Sum appropriated by towns for each child between 5 and 15 yrs. of age.	Amount raised by taxes for the support of Schools.	Income of Funds, with Dog Tax, appropriated to Schools.	TOTAL.	No. of Children between 5 and 15 years of age.	Amount contributed for board and fuel.
14	11	Ludlow,	$8 37.2	$1,800 00	–	–	215	–
12	12	Monson,	8 07.5	4,800 00	$303 70	$5,103 70	632	–
8	13	Wilbraham,	8 04.7	3,100 00	191 42	3,291 42	409	–
18	14	Russell,	7 75.7	800 00	61 00	861 00	111	–
17	15	Holyoke,	7 10.7	21,200 00	–	–	2,983	–
11	16	Granville,	6 95	1,800 00	139 02	1,939 02	279	$36 00
20	17	Tolland,	6 82.3	500 00	59 50	559 50	82	149 00
13	18	Chester,	6 65.1	1,600 00	95 89	1,695 89	255	–
21	19	Wales,	6 32	800 00	97 47	897 47	142	–
16	20	Holland,	6 25.7	350 00	37 96	387 96	62	–
19	21	Southwick,	5 95.6	1,000 00	143 64	1,143 64	193	–

HAMPSHIRE COUNTY.

For 1875–76.	For 1876–77.	TOWNS.	Sum appropriated by towns for each child between 5 and 15 yrs. of age.	Amount raised by taxes for the support of Schools.	Income of Funds, with Dog Tax, appropriated to Schools.	TOTAL.	No. of Children between 5 and 15 years of age.	Amount contributed for board and fuel.
6	1	GREENWICH,	$14 10.2	$1,100 00	–	–	78	–
1	2	South Hadley,	14 04.8	8,500 00	$182 00	$8,682 00	618	–
3	3	Northampton,	12 03.7	25,000 00	602 97	25,602 97	2,127	–
2	4	Amherst,	11 54.1	7,261 00	136 97	7,397 97	641	$75 00
9	5	Easthampton,	11 22.7	7,000 00	151 99	7,151 99	637	–
7	6	Granby,	10 63.8	1,500 00	–	–	141	–
5	7	Huntington,	8 65.2	1,600 00	78 46	1,678 46	194	–
16	8	Westhampton,	8 15.7	1,000 00	35 90	1,035 90	127	–
17	9	Belchertown,	8 07.7	3,500 00	134 97	3,634 97	450	–
4	10	Southampton,	7 99.2	1,450 00	68 48	1,518 48	190	–

13	11	Cummington,	$7 91	$1,200 00	$33 91	$1,233 91	156	–
22	12	Chesterfield,	7 80.3	1,100 00	47 00	1,147 00	147	$500 00
11	13	Ware,	7 55.1	7,000 00	173 06	7,173 06	950	–
10	14	Enfield,	7 53.3	1,300 00	78 46	1,378 46	183	–
8	15	Middlefield,	7 19.6	900 00	–	–	143	–
14	16	Hadley,	7 09.2	3,000 00	–	–	423	–
12	17	Plainfield,	7 06.7	500 00	15 96	515 96	73	–
21	18	Worthington,	7 04.4	800 00	228 42	1,028 42	146	860 00
19	19	Hatfield,	6 66.7	2,000 00	86 70	2,086 70	313	–
15	20	Pelham,	6 43	700 00	45 88	745 88	116	–
23	21	Williamsburg,	6 28.6	2,800 00	116 69	2,916 69	464	–
18	22	Goshen,	5 22.4	350 00	–	–	67	211 00
20	23	Prescott,	4 26.8	400 00	31 04	431 04	101	–

MIDDLESEX COUNTY.

2	1	NEWTON,	$26 03.8	$73,311 11	$975 17	$74,286 28	2,853	–
1	2	Arlington,	25 90.6	20,000 00	–	–	772	–
9	3	Winchester,	23 43.7	12,000 00	–	–	512	–
3	4	Watertown,	21 65.2	18,858 62	–	–	871	–
5	5	Cambridge,	21 37	175,615 48	–	–	8,218	–
4	6	Medford,	20 28.8	24,447 00	–	–	1,205	–
6	7	Belmont,	19 90.1	8,000 00	–	–	402	–
14	8	Concord,	19 13.6	8,554 04	–	–	447	–
8	9	Weston,	18 73	3,764 80	–	–	201	–
10	10	Somerville,	18 33.9	73,871 83	–	–	4,028	–
7	11	Lexington,	18 03.6	9,000 00	–	–	499	–
11	12	Malden,	17 80.3	35,000 00	–	–	1,966	–
12	13	Reading,	17 63.5	8,500 00	–	–	482	–
16	14	Melrose,	17 48.9	14,254 00	–	–	815	–
19	15	Boxborough,	17 07.8	825 93	62 13	888 06	52	–

MIDDLESEX COUNTY—Concluded.

For 1875-76.	For 1876-77.	TOWNS.	Sum appropriated by towns for each child between 5 and 15 yrs. of age.	Amount raised by taxes for the support of Schools.	Income of Funds, with Dog Tax, appropriated to Schools.	TOTAL.	No. of Children between 5 and 15 years of age.	Amount contributed for board and fuel.
15	16	Waltham,	$16 55.7	$29,101 34	$468 86	$29,570 20	1,786	-
13	17	Everett,	15 78.2	11,000 00	-	-	697	-
17	18	Framingham,	15 51.3	13,750 00	801 60	14,551 60	938	-
20	19	Stoneham,	15 25.1	14,000 00	-	-	918	-
18	20	Lincoln,	15 22.8	2,000 00	77 76	2,077 76	136	-
22	21	Lowell,	14 76.9	109,293 00	-	-	7,400	-
27	22	Dracut,	13 30.3	2,400 00	180 85	2,580 85	194	-
25	23	Littleton,	12 88.8	2,100 00	142 50	2,242 50	174	-
28	24	Sherborn,	12 74	2,000 00	63 93	2,063 93	162	-
33	25	Groton,	12 64.9	5,000 00	249 41	5,249 41	415	-
21	26	Sudbury,	12 62.3	2,400 00	112 00	2,512 00	199	-
23	27	Woburn,	12 53.4	27,550 21	-	-	2,198	-
40	28	Carlisle,	11 89	800 00	91 77	891 77	75	-
32	29	Tewksbury,	11 87.2	2,200 00	174 42	2,374 42	200	-
26	30	Wakefield,	11 84.1	12,000 00	468 86	12,468 86	1,053	-
29	31	Holliston,	11 73.7	6,300 00	249 41	6,549 41	558	-
30	32	Shirley,	11 71.4	2,500 00	135 66	2,635 66	225	-
24	33	Bedford,	11 56	1,800 00	130 53	1,930 53	167	-
44	34	North Reading,	11 53.8	1,800 00	-	-	156	-
50	35	Ashby,	11 47.8	1,642 69	113 47	1,756 16	153	$35 00
31	36	Burlington,	11 03.2	1,000 00	92 16	1,092 16	99	-
41	37	Ashland,	10 83.7	4,400 00	-	-	406	-
35	38	Chelmsford,	10 50.8	5,000 00	285 57	5,285 57	503	-
36	39	Wayland,	10 28.8	3,000 00	127 59	3,127 59	304	-
38	40	Dunstable,	10 00	800 00	-	-	80	-
37	41	Wilmington,	9 87.3	1,550 00	89 00	1,639 00	166	-

53	42	Westford,	$9 83.6	$3,000 00	–	–	305	–
39	43	Tyngsborough,	9 63.3	1,050 00	–	–	109	–
42	44	Stow,	9 36.4	1,600 00	$132 38	$1,732 38	185	–
48	45	Acton,	9 20.9	2,500 00	225 72	2,725 72	296	–
51	46	Townsend,	9 11.4	3,500 00	–	–	384	$62 00
46	47	Hopkinton,	9 02.9	9,000 00	453 89	9,453 89	1,047	–
47	48	Natick,	8 89.4	14,000 00	–	–	1,574	–
54	49	Billerica,	8 84.5	3,000 00	210 90	3,210 90	363	–
34	50	Pepperell,	8 82.4	3,000 00	–	–	340	–
52	51	Hudson,	8 56.5	6,250 00	157 00	6,407 00	748	–
43	52	Ayer,	8 50.4	3,000 00	189 00	3,189 00	375	–
49	53	Marlborough,	8 28.1	16,000 00	–	–	1,932	–
45	54	Maynard,	7 32.3	2,500 00	224 01	2,724 01	372	–

NANTUCKET COUNTY.

NANTUCKET,			$10 76.1	$6,500 00	–	–	604	–

NORFOLK COUNTY.

1	1	BROOKLINE,	$32 35.3	$38,500 00	–	–	1,190	–
2	2	Milton,	28 57	12,000 00	–	–	420	–
3	3	Walpole,	18 29.2	6,000 00	–	–	328	–
4	4	Dedham,	18 08.3	20,488 50	–	–	1,133	–
5	5	Needham,	16 73.6	13,500 00	$575 19	$14,075 19	841	–
6	6	Norwood,	16 29.1	6,500 00	–	–	399	–
14	7	Medfield,	15 87.2	2,300 00	144 28	2,444 28	154	–

NORFOLK COUNTY—CONCLUDED.

For 1875-76.	For 1876-77.	TOWNS.	Sum appropriated by towns for each child between 5 and 15 yrs. of age.	Amount raised by taxes for the support of Schools.	Income of Funds, with Dog Tax, appropriated to Schools.	TOTAL.	No. of Children between 5 and 15 years of age.	Amount contributed for board and fuel.
7	8	Quincy, ...	$14 97	$25,000 00	–	–	1,670	–
11	9	Wrentham, ...	14 08.5	5,500 00	$260 96	$5,760 96	409	–
9	10	Holbrook, ...	13 63	5,000 00	152 33	5,152 33	378	–
12	11	Canton, ...	12 72.5	11,400 00	612 82	12,012 82	944	–
15	12	Hyde Park, ...	12 54.1	15,400 00	–	–	1,228	–
8	13	Foxborough, . . .	12 04.8	6,000 00	–	–	498	–
13	14	Weymouth, ...	11 94.1	22,500 00	1,155 89	23,655 89	1,981	–
10	15	Cohasset, ...	11 39.5	5,000 00	219 05	5,219 05	458	–
17	16	Dover, ...	10 99.2	1,200 00	119 00	1,319 00	120	–
23	17	Randolph, ...	10 61.7	8,600 00	–	–	810	–
20	18	Stoughton, ...	10 55.6	11,000 00	–	–	1,042	–
21	19	Franklin, ...	10 52.6	6,000 00	–	–	570	–
16	20	Braintree, ...	9 73.2	6,800 00	411 06	7,211 06	741	–
18	21	Bellingham, . . .	9 60.9	1,800 00	275 71	2,075 71	216	–
22	22	Medway, ...	8 91.8	7,000 00	437 50	7,437 50	834	–
19	23	Norfolk, ...	7 96.3	1,400 00	97 15	1,497 15	188	–
24	24	Sharon, ...	7 56.3	1,800 00	317 74	2,117 74	280	–

PLYMOUTH COUNTY.

For 1875-76.	For 1876-77.	TOWNS.	Sum appropriated by towns for each child between 5 and 15 yrs. of age.	Amount raised by taxes for the support of Schools.	Income of Funds, with Dog Tax, appropriated to Schools.	TOTAL.	No. of Children between 5 and 15 years of age.	Amount contributed for board and fuel.
2	1	KINGSTON, ...	$14 98.9	$3,200 00	$127 63	$3,327 63	222	–
1	2	Hingham, ...	14 81.7	11,735 49	–	–	792	–
20	3	Hull, ...	13 15.8	750 00	–	–	57	–
3	4	Plymouth, ...	12 96	15,500 00	–	–	1,196	–

4	5	Bridgewater,	$12 74.3	$8,700 00	$386 00	$9,086 00	713	–
7	6	Brockton,	12 01.4	22,975 00	345 16	23,320 16	1,941	–
9	7	East Bridgewater,	11 80	5,050 00	229 24	5,279 24	444	–
5	8	Halifax,	11 53.8	900 00	–	–	78	–
6	9	Lakeville,	11 32.2	2,179 77	130 00	2,309 77	204	–
8	10	South Abington,	10 23.7	4,500 00	209 55	4,709 55	462	–
10	11	Marshfield,	10 11.9	2,800 00	185 23	2,985 23	295	–
11	12	Mattapoisett,	9 53.5	2,100 00	93 00	2,193 00	230	–
16	13	Abington,	9 53	6,000 00	328 00	6,328 00	664	–
22	14	South Scituate,	9 44.7	3,000 00	174 39	3,174 39	336	$12 00
15	15	Wareham,	9 39.2	5,500 00	267 00	5,767 00	614	–
13	16	Hanover,	9 30.1	3,000 00	125 00	3,125 00	336	–
17	17	Middleborough,	9 08.1	8,000 00	–	–	881	–
14	18	West Bridgewater,	8 29.1	2,500 00	252 53	2,752 53	332	–
19	19	Duxbury,	8 10.4	2,800 00	247 00	3,047 00	376	–
26	20	Pembroke,	8 06.2	1,800 00	86 56	1,886 56	234	–
24	21	Hanson,	8 03.5	1,600 00	87 44	1,687 44	210	–
18	22	Scituate,	7 69.6	3,500 00	147 97	3,647 97	474	–
23	23	Rockland,	7 57.6	7,000 00	333 73	7,333 73	968	–
12	24	Carver,	7 47.9	1,500 00	25 68	1,525 68	204	–
21	25	Marion,	6 90	1,000 00	–	–	145	–
27	26	Plympton,	6 81.4	1,000 00	110 73	1,110 73	163	–
25	27	Rochester,	6 70.3	1,200 00	120 58	1,320 58	197	–

SUFFOLK COUNTY.

1	1	BOSTON,	$23 78.1	$1,377,711 01	$16,752 70	$1,394,463 71	58,636	–
2	2	Chelsea,	17 41.6	55,194 08	–	–	3,169	–
4	3	Winthrop,	16 13.6	1,800 00	87 90	1,887 90	117	–
3	4	Revere,	11 56.6	3,500 00	131 80	3,631 80	314	–

WORCESTER COUNTY.

For 1875–76.	For 1876–77.	TOWNS.	Sum appropriated by towns for each child between 5 and 15 yrs. of age.	Amount raised by taxes for the support of Schools.	Income of Funds, with Dog Tax, appropriated to Schools.	TOTAL.	No. of Children between 5 and 15 years of age.	Amount contributed for board and fuel.
1	1	LANCASTER, ...	$21 20.1	$6,000 00	–	–	283	–
2	2	Fitchburg, ...	16 30.4	36,000 00	–	–	2,208	–
3	3	Barre, ...	15 55	5,367 67	$183 60	$5,551 27	357	–
8	4	Worcester, ...	14 38.4	126,600 07	–	–	8,801	–
7	5	Northborough, ...	13 80	3,200 00	–	–	232	$67 06
19	6	Athol, ...	13 02.1	7,442 32	305 51	7,747 83	595	–
4	7	New Braintree, ...	12 80.6	1,400 00	70 96	1,470 96	107	–
18	8	Upton, ...	12 42.8	4,026 78	–	–	324	–
6	9	Southborough, ...	12 13.7	4,500 00	99 88	4,599 88	379	–
17	10	Petersham, ...	12 10.3	2,250 00	110 00	2,360 00	195	–
15	11	Sterling, ...	11 89.9	3,200 00	191 27	3,391 27	285	–
5	12	Brookfield, ...	11 44.7	4,600 00	288 15	4,888 15	427	–
11	13	Leicester, ...	11 14.1	5,600 00	416 57	6,016 57	540	–
9	14	Lunenburg, ...	10 91.2	1,800 00	66 04	1,866 04	171	28 50
27	15	Rutland, ...	10 87.1	2,050 00	59 00	2,109 00	194	–
20	16	Shrewsbury, ...	10 60.1	3,000 00	–	–	283	–
13	17	Leominster, ...	10 54.4	8,509 25	–	–	807	–
16	18	Westminster, ...	10 41.7	2,625 00	–	–	252	–
14	19	Uxbridge, ...	10 41.5	6,300 00	220 00	6,520 00	626	–
34	20	Gardner, ...	10 29.8	6,500 00	286 42	6,786 42	659	–
21	21	Paxton, ...	10 28.4	1,157 78	66 07	1,223 85	119	–
31	22	Northbridge, ...	10 09	7,950 00	373 20	8,323 20	825	–
32	23	Templeton, ...	9 97.9	4,700 00	169 89	4,869 89	488	–
37	24	Clinton, ...	9 94.1	14,385 20	–	–	1,447	–
23	25	Westborough, ...	9 89.1	7,775 00	–	–	786	–
29	26	Harvard, ...	9 87.6	2,400 00	–	–	243	–

10	27	Boylston, ...	$9 81.8	$1,525 00	$85 19	$1,610 19	164	$35 00
22	28	Charlton, ...	9 55.4	3,000 00	-	-	314	-
12	29	Warren, ...	9 52.4	5,000 00	-	-	525	-
38	30	Oxford, ...	9 50.4	4,600 00	-	-	484	-
25	31	Douglas, ...	9 48.6	4,000 00	287 72	4,287 72	452	-
30	32	Hubbardston, . . .	9 46.9	2,500 00	-	-	264	-
36	33	Sturbridge, ...	9 35.4	3,657 56	-	-	391	-
48	34	Phillipston, ...	9 20	1,000 00	76 38	1,076 38	117	-
42	35	Webster, ...	9 13.6	6,200 00	268 30	6,468 30	708	-
39	36	Mendon, ...	9 03.8	1,700 00	243 32	1,943 32	215	-
24	37	North Brookfield, . .	8 89.2	6,500 00	266 87	6,766 87	761	100 00
33	38	Princeton, ...	8 50	1,700 00	-	-	200	-
35	39	Dana, ...	8 45.4	800 00	53 86	853 86	101	-
26	40	Royalston, ...	8 41.3	1,500 00	90 09	1,590 09	189	-
45	41	Grafton, ...	8 01.7	6,750 00	-	-	842	-
43	42	West Brookfield, . . .	7 97.9	3,000 00	-	-	376	48 00
46	43	Southbridge, . . .	7 86	9,000 00	-	-	1,145	-
49	44	Winchendon, . . .	7 69.4	5,693 46	-	-	740	-
44	45	Milford, ...	7 60.4	16,588 00	316 28	16,904 28	2,223	-
41	46	Ashburnham, . . .	7 59.7	3,000 00	122 40	3,122 40	411	-
50	47	Millbury, ...	7 52.7	7,000 00	-	-	930	-
53	48	Blackstone, ...	7 16	6,646 96	277 11	6,924 07	967	-
40	49	Dudley, ...	7 12.4	4,200 00	145 74	4,345 74	610	-
51	50	Hardwick, ...	7 03	2,600 00	387 94	2,987 94	425	-
56	51	Bolton, ...	6 74.2	1,200 00	-	-	178	-
52	52	Oakham, ...	6 49.1	900 00	112 61	1,012 61	156	10 00
57	53	Berlin, ...	6 18.3	1,100 00	117 99	1,217 99	197	-
28	54	Spencer, ...	6 14.3	6,500 00	-	-	1,058	-
58	55	Sutton, ...	6 02.8	3,800 00	190 94	3,990 94	662	-
47	56	Holden, ...	5 87.6	2,500 00	256 06	2,756 06	469	-
55	57	West Boylston, . . .	5 36	3,000 00	339 00	3,339 00	623	-
54	58	Auburn, ...	5 24.5	1,500 00	-	-	286	16 00

GRADUATED TABLES—FIRST SERIES.

Showing the Comparative Amount of Money appropriated by the different Counties in the State for the Education of each Child between the ages of 5 and 15 years in the County.

For 1875-76.	For 1876-77.	COUNTIES.	Sum appropriated by Counties for each Child between 5 and 15 years of age.	Amount raised by taxes for the support of Schools.	Income of Funds, with Dog Tax, appropriated to Schools.	TOTAL.	No. of Children between 5 and 15 years of age.	Amount contributed for board and fuel.
1	1	SUFFOLK, ...	$23 38.1	$1,438,205 09	$16,972 40	$1,455,177 49	62,236	-
2	2	Middlesex, . . .	16 28.2	819,790 05	5,967 28	825,757 33	50,715	$97 00
3	3	Norfolk, ...	14 58.3	240,688 50	4,778 68	245,467 18	16,832	-
6	4	Hampden, . . .	12 79.4	211,828 87	2,939 79	214,768 66	16,787	341 00
5	5	Essex, ...	12 67.1	494,948 53	6,699 69	501,648 22	39,591	200 00
7	6	Bristol, ...	11 94.8	270,202 04	4,449 51	274,651 55	22,988	176 00
4	7	Nantucket, . . .	10 76.2	6,500 00	-	-	604	-
9	8	Worcester, . . .	10 67.9	408,000 05	6,544 36	414,544 41	38,816	304 56
8	9	Barnstable, . . .	10 63.1	62,031 00	1,101 35	63,132 35	5,930	121 00
10	10	Plymouth, . . .	10 47.9	129,790 26	4,012 42	133,802 68	12,768	12 00
11	11	Hampshire, . . .	9 70.4	79,961 00	2,377 86	82,338 86	8,485	1,646 00
12	12	Franklin, ...	9 50	55,255 96	1,669 84	56,925 80	5,992	1,240 69
14	13	Dukes, ...	8 64	6,125 00	78 24	6,203 24	718	-
13	14	Berkshire, . . .	7 91.2	108,349 50	1,728 69	110,078 19	13,913	1,141 73

AGGREGATE FOR THE STATE.

STATE, ...	$14 81.5	$4,331,675 85	$59,229 11	$4,390,904 96	296,375	$5,279 98

GRADUATED TABLES—First Series.

Showing the Comparative Amount of Money, including Voluntary Contributions, appropriated by the different Counties in the State for the Education of each Child between the ages of 5 and 15 years in the County.

For 1875–76.	For 1876–77.	COUNTIES.	Totals.
1	1	SUFFOLK, ...	$23 38.1
2	2	Middlesex, ...	16 28.4
3	3	Norfolk, ...	14 58.3
5	4	Hampden, ...	12 81.4
6	5	Essex, ...	12 67.6
7	6	Bristol, ...	11 95.5
4	7	Nantucket, ...	10 76.1
9	8	Worcester, ...	10 68.7
8	9	Barnstable, ...	10 65.1
11	10	Plymouth, ...	10 48
10	11	Hampshire, ...	9 89.8
12	12	Franklin, ...	9 70.7
14	13	Dukes, ...	8 63.9
13	14	Berkshire, ...	7 99.4
Aggregate for the State, ...			$14 83.3

GRADUATED TABLES—SECOND SERIES.

The next Table exhibits the appropriation of the cities and towns, as compared with their respective valuations in 1876.

The first column shows the rank of the cities and towns in a similar Table for 1875–76, according to their valuation in 1875.

The second column indicates, in numerical order, the precedence of the cities and towns in respect to the liberality of their appropriations for 1876–77, according to their valuation in 1876.

The third consists of the names of the cities and towns, as numerically arranged.

The fourth shows the percentage of taxable property appropriated to the support of the Public Schools. The result is equivalent in value to mills and hundredths of mills. The decimals are carried to three figures, in order to indicate more perfectly the distinction between the different towns. The first figure (mills) expresses the principal value, and is separated from the last two figures by a point.

The appropriations for schools are not given in the following Table, as they may be found by referring to the previous Tables; also in the Abstract of School Returns, commencing on page ii. These appropriations include the sum raised by taxes, the income of the surplus revenue, and of such other funds as the towns may appropriate at their option, either to support Common Schools, or to pay ordinary municipal expenses. The income of other local funds, and the voluntary contributions, are not included in the estimate. The appropriations are reckoned the same as in the first series of Tables, and for the same reasons.

The amount of taxable property, in each city and town, according to the last State Valuation, is also omitted, as it is already given in the foregoing Abstract of School Returns.

If the rank assigned to towns in the next Tables is compared with the rank of the same town in the former series, it will be seen that they hold, in many instances, a very different place in the scale.

GRADUATED TABLES—SECOND SERIES.

[FOR THE STATE.]

A Graduated Table, in which all the Towns in the State are numerically arranged, according to the percentage of their taxable property, appropriated to the support of Public Schools, for the year 1876–77.

For 1875–76, by the Assessors' Returns of 1875.	For 1876–77, by the State Valuation of 1876.	TOWNS.	Percentage of Valuation appropriated to Public Schools—equivalent to mills and hundredths of mills.
1	1	HAWLEY,	$.007-36
16	2	Chatham,	6–18
13	3	Sandwich,	6–09
19	4	Orleans,	6–06
5	5	Truro,	5–95
15	6	Wellfleet,	5–63
21	7	Wareham,	5–60
158	8	Holbrook,	5–48
4	9	Heath,	5–31
10	10	Eastham,	5–20
24	11	Harwich,	4–93
25	12	Wrentham,	4–92
20	13	South Hadley,	4–89
9	14	Granville,	4–78
8	15	Amesbury,	4–71
–	16	Merrimac,	4–67
23	17	Stoneham,	4–65
17	18	Upton,	4–62
103	19	Northbridge,	4–61
18	20	Shutesbury,	4–61
7	21	Marlborough,	4–58
68	22	Otis,	4–56
87	23	Shelburne,	4–55
125	24	Bridgewater,	4–54
27	25	Dudley,	4–54
36	26	Charlemont,	4–52
6	27	Pelham,	4–49
34	28	Stoughton,	4–47
43	29	Rehoboth,	4–46
48	30	Lakeville,	4–45
28	31	Gloucester,	4–42
83	32	Templeton,	4–42
35	33	Haverhill,	4–40
11	34	Mashpee,	$.004-38
22	35	Walpole,	4–36
29	36	Hopkinton,	4–35
47	37	Bradford,	4–34
39	38	Ware,	4–34
41	39	Wendell,	4–30
77	40	Deerfield,	4–29
152	41	E. Bridgew'r,	4–29
3	42	Monroe,	4–27
40	43	Adams,	4–25
67	44	Weymouth,	4–23
74	45	Erving,	4–22
37	46	Medway,	4–22
30	47	Rutland,	4–20
75	48	Mansfield,	4–16
26	49	Douglas,	4–14
50	50	Brookfield,	4–12
52	51	Chicopee,	4–12
71	52	Fairhaven,	4–12
62	53	Brockton,	4–11
112	54	Randolph,	4–09
14	55	Rowe,	4–09
32	56	Georgetown,	4–08
31	57	Palmer,	4–08
84	58	Barnstable,	4–02
53	59	Franklin,	4–01
149	60	Salisbury,	4–01
184	61	Cheshire,	3–99
57	62	N. Reading,	3–99
45	63	Bellingham,	3–98
60	64	Paxton,	3–97
151	65	Greenwich,	3–96
59	66	Provincetown,	3–91

For 1875-76, by the Assessors' Returns of 1875.	For 1876-77, by the State Valuation of 1876.	TOWNS.	Percentage of Valuation appropriated to Public Schools—equivalent to mills and hundredths of mills.	For 1875-76, by the Assessors' Returns of 1875.	For 1876-77, by the State Valuation of 1876.	TOWNS.	Percentage of Valuation appropriated to Public Schools—equivalent to mills and hundredths of mills.
73	67	Montgomery, .	$.003-88	97	117	Malden, . .	$.003-51
88	68	Sunderland, .	3-88	100	118	Norfolk, . .	3-51
106	69	Canton, . .	3-87	216	119	Ashfield, . .	3-50
63	70	Northfield, .	3-87	131	120	Brimfield, .	3-50
138	71	Swansea, .	3-86	92	121	Southborough,	3-50
168	72	Blandford, .	3-84	66	122	Chester, . .	3-48
101	73	Rockland, .	3-83	108	123	Arlington, .	3-46
109	74	N. Andover, .	3-82	107	124	Holliston, .	3-45
55	75	Warwick, .	3-82	165	125	Dedham, .	3-44
78	76	W. Brookfield,	3-82	229	126	Barre, . .	3-43
191	77	Chesterfield, .	3-80	177	127	Leyden, . .	3-43
81	78	Peabody, .	3-80	128	128	Monterey, .	3-43
232	79	Greenfield, .	3-79	129	129	Tyngsborough,	3-43
64	80	Westhampton,	3-79	130	130	Becket, . .	3-42
115	81	Plymouth, .	3-78	38	131	Townsend, .	3-42
76	82	Natick, . .	3-76	124	132	Blackstone, .	3-38
51	83	N. Brookfield,	3-76	175	133	Acushnet, .	3-37
86	84	Newburyport, .	3-75	153	134	Ashland, . .	3-37
85	85	Monson, . .	3-74	224	135	Hanson, . .	3-37
104	86	Plympton, .	3-74	127	136	Phillipston, .	3-37
49	87	Berkley, . .	3-72	99	137	Northampton, .	3-35
33	88	Florida, . .	3-72	12	138	Peru, . .	3-34
186	89	Belchertown, .	3-71	98	139	Milford, . .	3-33
248	90	Longmeadow,	3-68	218	140	Ipswich, . .	3-32
196	91	Brewster, .	3-67	235	141	Leicester, .	3-32
110	92	Lee, . .	3-67	117	142	Quincy, . .	3-32
80	93	Boxborough, .	3-66	193	143	Rowley, . .	3-32
154	94	Conway, . .	3-66	155	144	Gardner, . .	3-31
65	95	Foxborough, .	3-66	164	145	Shirley, . .	3-31
69	96	Chelmsford, .	3-65	166	146	Framingham, .	3-29
144	97	Petersham, .	3-65	54	147	Huntington, .	3-29
46	98	Hudson, . .	3-64	148	148	Oxford, . .	3-29
119	99	Dighton, . .	3-63	194	149	Webster, .	3-29
79	100	Abington, .	3-61	146	150	Ludlow, . .	3-28
297	101	South Scituate,	3-61	137	151	S. Abington, .	3-28
42	102	Washington, .	3-60	126	152	Danvers, . .	3-26
209	103	Ashby, . .	3-59	132	153	Dennis, . .	3-25
102	104	Buckland, .	3-59	199	154	Middleboro', .	3-25
225	105	Groveland, .	3-58	174	155	Sturbridge, .	3-25
61	106	Reading, . .	3-58	293	156	Pembroke, .	3-24
143	107	W. Newbury, .	3-58	140	157	N. Marlboro', .	3-23
122	108	Hingham, .	3-57	236	158	Easton, . .	3-22
91	109	Norwood, .	3-56	118	159	Coleraine, .	3-21
142	110	Attleborough, .	3-54	211	160	Clinton, . .	3-20
95	111	Marblehead, .	3-54	202	161	Sterling, . .	3-20
116	112	Uxbridge, .	3-54	123	162	Westminster, .	3-20
93	113	Sandisfield, .	3-53	286	163	Winchester, .	3-20
121	114	Saugus, . .	3-53	213	164	Littleton, .	3-19
72	115	Wilbraham, .	3-52	105	165	Woburn, . .	3-18
56	116	Windsor, .	3-52	197	166	Yarmouth, .	3-18

For 1875-76, by the Assessors' Returns of 1875.	For 1876-77, by the State Valuation of 1876.	TOWNS.	Percentage of Valuation appropriated to Public Schools—equivalent to mills and hundredths of mills.	For 1875-76, by the Assessors' Returns of 1875.	For 1876-77, by the State Valuation of 1876.	TOWNS.	Percentage of Valuation appropriated to Public Schools—equivalent to mills and hundredths of mills.
167	167	New Salem,	$.003-17	201	217	Hardwick,	$.002-89
114	168	W. Bridgew'r,	3-17	214	218	Montague,	2-89
282	169	Andover,	3-16	265	219	Tewksbury,	2-88
254	170	Swampscott,	3-16	135	220	Seekonk,	2-86
230	171	Hinsdale,	3-15	249	221	Scituate,	2-85
150	172	W. Boylston,	3-15	220	222	Tisbury,	2-85
212	173	Easthampton,	3-14	217	223	Hubbardston,	2-84
173	174	Westborough,	3-14	141	224	Oakham,	2-84
162	175	Hanover,	3-12	273	225	Athol,	2-83
187	176	Lynn,	3-12	171	226	Cummington,	2-83
215	177	Sheffield,	3-12	262	227	Freetown,	2-83
172	178	Chelsea,	3-11	200	228	Westport,	2-83
157	179	New Braintree,	3-11	278	229	Duxbury,	2-82
243	180	Wakefield,	3-10	260	230	Dartmouth,	2-81
223	181	Waltham,	3-10	261	231	Dracut,	2-81
44	182	Southampton,	3-08	204	232	Pittsfield,	2-81
226	183	Springfield,	3-08	267	233	Sutton,	2-81
246	184	Fitchburg,	3-07	238	234	Westford,	2-81
70	185	Grafton,	3-06	227	235	Cambridge,	2-80
159	186	Melrose,	3-05	163	236	Carver,	2-80
240	187	Southbridge,	3-05	147	237	Holden,	2-80
182	188	Marshfield,	3-04	231	238	Medford,	2-80
161	189	Ayer,	3-03	251	239	Millbury,	2-80
192	190	Dover,	3-03	206	240	Wayland,	2-80
207	191	Methuen,	3-03	198	241	Dunstable,	2-79
133	192	Middleton,	3-03	169	242	Leverett,	2-79
185	193	Wilmington,	3-03	257	243	Rochester,	2-79
113	194	Charlton,	3-02	237	244	Salem,	2-79
233	195	Concord,	3-02	269	245	Orange,	2-78
111	196	Lexington,	3-02	275	246	Somerville,	2-78
176	197	Clarksburg,	3-01	90	247	Lowell,	2-77
252	198	Norton,	3-01	300	248	Harvard,	2-76
120	199	Holland,	2-99	203	249	Raynham,	2-76
58	200	Mt.Washingt'n,	2-98	170	250	Agawam,	2-75
250	201	W.Springfield,	2-97	219	251	W.Stockb'dge,	2-75
228	202	Williamstown,	2-97	241	252	Worthington,	2-73
221	203	Boylston,	2-96	195	253	Westfield,	2-72
89	204	Dana,	2-95	94	254	Warren,	2-71
181	205	Essex,	2-95	256	255	Shrewsbury,	2-68
188	206	Mendon,	2-94	82	256	Savoy,	2-66
139	207	Middlefield,	2-94	190	257	Sudbury,	2-66
145	208	Ashburnham,	2-93	277	258	Winchendon,	2-64
189	209	Granby,	2-93	253	259	Lincoln,	2-63
205	210	Plainfield,	2-93	242	260	Nantucket,	2-63
136	211	Amherst,	2-91	239	261	Newton,	2-63
156	212	Halifax,	2-91	287	262	Worcester,	2-63
266	213	Lenox,	2-91	244	263	Lawrence,	2-60
180	214	Auburn,	2-90	276	264	New Bedford,	2-60
283	215	Lancaster,	2-90	274	265	Northborough,	2-59
178	216	Needham,	2-90	179	266	Somerset,	2-59

For 1875-76, by the Assessors' Returns of 1875.	For 1876-77, by the State Valuation of 1876.	TOWNS.	Percentage of Valuation appropriated to Public Schools—equivalent to mills and hundredths of mills.	For 1875-76, by the Assessors' Returns of 1875.	For 1876-77, by the State Valuation of 1876.	TOWNS.	Percentage of Valuation appropriated to Public Schools—equivalent to mills and hundredths of mills.
271	267	Berlin,	$.002-57	264	305	Maynard,	$.002-13
316	268	Williamsburg,	2-55	280	306	Hadley,	2-11
183	269	Braintree,	2-54	307	307	Enfield,	2-09
309	270	Medfield,	2-53	320	308	Russell,	2-07
268	271	Taunton,	2-52	308	309	Wales,	2-06
270	272	Wenham,	2-50	313	310	Boxford,	2-05
289	273	Groton,	2-48	302	311	Egremont,	2-04
284	274	Bernardston,	2-47	311	312	Beverly,	2-02
288	275	Carlisle,	2-47	327	313	Billerica,	2-01
234	276	Everett,	2-45	324	314	Whately,	2-01
247	277	Lunenburg,	2-43	326	315	Newbury,	1-99
210	278	Watertown,	2-43	323	316	Fall River,	1-98
263	279	Gt. Barrington,	2-42	295	317	Sharon,	1-98
301	280	Kingston,	2-42	321	318	Southwick,	1-93
298	281	Bolton,	2-41	329	319	Stockbridge,	1-91
134	282	Spencer,	2-40	310	320	Hamilton,	1-90
245	283	Royalston,	2-39	332	321	Hatfield,	1-89
290	284	Tyringham,	2-39	322	322	Boston,	1-86
296	285	Dalton,	2-36	315	323	Lynnfield,	1-82
208	286	Pepperell,	2-36	312	324	Princeton,	1-82
96	287	Goshen,	2-35	319	325	Revere,	1-75
281	288	Hyde Park,	2-35	338	326	Winthrop,	1-74
292	289	Tolland,	2-31	303	327	Topsfield,	1-73
299	290	Weston,	2-31	331	328	Gill,	1-72
222	291	Stow,	2-30	314	329	Edgartown,	1-61
291	292	Sherborn,	2-28	333	330	Alford,	1-56
279	293	Bedford,	2-27	330	331	Manchester,	1-56
272	294	Rockport,	2-26	328	332	Chilmark,	1-54
259	295	Lanesborough,	2-25	336	333	Richmond,	1-54
258	296	Marion,	2-25	334	334	Milton,	1-51
255	297	Cohasset,	2-23	285	335	Hancock,	1-43
304	298	Burlington,	2-21	337	336	Brookline,	1-40
306	299	Acton,	2-20	339	337	Gosnold,	1-24
305	300	Holyoke,	2-20	335	338	New Ashford,	1-22
160	301	Prescott,	2-15	325	339	Mattapoisett,	1-11
294	302	Leominster,	2-14	340	340	Hull,	1-05
317	303	Belmont,	2-13	341	341	Nahant,	0-57
318	304	Falmouth,	2-13	2	342	Gay Head,	–

GRADUATED TABLES—SECOND SERIES.

[COUNTY TABLES.]

In which all the Towns in the respective Counties in the State are numerically arranged, according to the percentage of their taxable property, appropriated for the support of Public Schools, for the year 1876–77.

BARNSTABLE COUNTY.

For 1875–76, by the State Valuation of 1875.	For 1876–77, by the State Valuation of 1876.	TOWNS.	Percentage of Valuation appropriated to Public Schools—equivalent to mills and hundredths of mills.	For 1875–76, by the State Valuation of 1875.	For 1876–77, by the State Valuation of 1876.	TOWNS.	Percentage of Valuation appropriated to Public Schools—equivalent to mills and hundredths of mills.
6	1	CHATHAM,	$.006-18	3	8	Mashpee,	$.004-38
4	2	Sandwich,	6–09	10	9	Barnstable,	4–02
7	3	Orleans,	6–06	9	10	Provincetown,	3-91
1	4	Truro,	5–95	12	11	Brewster.	3-67
5	5	Wellfleet,	5–63	11	12	Dennis,	3-25
2	6	Eastham,	5–20	13	13	Yarmouth,	3-18
8	7	Harwich,	4–93	14	14	Falmouth,	2-13

BERKSHIRE COUNTY.

7	1	OTIS,	$.004-56	19	17	Williamstown,	$.002-97
3	2	Adams,	4–25	23	18	Lenox,	2-91
15	3	Cheshire,	3–99	16	19	Pittsfield,	2-81
2	4	Florida,	3–72	18	20	W. Stockb'dge,	2–75
10	5	Lee,	3–67	8	21	Savoy,	2–66
4	6	Washington,	3–60	22	22	Gt. Barrington,	2–42
9	7	Sandisfield,	3–53	25	23	Tyringham,	2–39
5	8	Windsor,	3–52	26	24	Dalton,	2–36
11	9	Monterey,	3–43	21	25	Lanesborough,	2–25
12	10	Becket,	3–42	27	26	Egremont,	2–04
1	11	Peru,	3–34	28	27	Stockbridge,	1–91
13	12	New Marlboro',	3–23	29	28	Alford,	1–56
20	13	Hinsdale,	3–15	31	29	Richmond,	1–54
17	14	Sheffield,	3–12	24	30	Hancock,	1–43
14	15	Clarksburg,	3–01	30	31	New Ashford,	1–22
6	16	Mt. Washingt'n,	2–98				

BRISTOL COUNTY.

For 1875–76, by the State Valuation of 1875.	For 1876–77, by the State Valuation of 1876.	TOWNS.	Percentage of Valuation appropriated to Public Schools—equivalent to mills and hundredths of mills.	For 1875–76, by the State Valuation of 1875.	For 1876–77, by the State Valuation of 1876.	TOWNS.	Percentage of Valuation appropriated to Public Schools—equivalent to mills and hundredths of mills.
1	1	REHOBOTH,	$.004-46	6	11	Seekonk,	$.002-86
4	2	Mansfield,	4–16	16	12	Freetown,	2–83
3	3	Fairhaven,	4–12	11	13	Westport,	2–83
7	4	Swansea,	3–86	15	14	Dartmouth,	2–81
2	5	Berkley,	3–72	12	15	Raynham,	2–76
5	6	Dighton,	3–63	18	16	New Bedford,	2–60
8	7	Attleborough,	3–54	10	17	Somerset,	2–59
9	8	Acushnet,	3–37	17	18	Taunton,	2–52
13	9	Easton,	3–22	19	19	Fall River,	1–98
14	10	Norton,	3–01				

DUKES COUNTY.

2	1	TISBURY,	$.002-85	5	4	Gosnold,	$.001-24
3	2	Edgartown,	1–61	1	5	Gay Head,	–
4	3	Chilmark,	1–54				

ESSEX COUNTY.

1	1	AMESBURY,	$.004-71	23	19	Swampscott,	$.003-16
–	2	Merrimac,	4–67	16	20	Lynn,	3–12
2	3	Gloucester,	4–42	18	21	Methuen,	3–03
4	4	Haverhill,	4–40	12	22	Middleton,	3–03
5	5	Bradford,	4–34	15	23	Essex,	2–95
3	6	Georgetown,	4–08	21	24	Salem,	2–79
14	7	Salisbury,	4–01	22	25	Lawrence,	2–60
9	8	No. Andover,	3–82	24	26	Wenham,	2–50
6	9	Peabody,	3–80	25	27	Rockport,	2–26
7	10	Newburyport,	3–75	30	28	Boxford,	2–05
20	11	Groveland,	3–58	29	29	Beverly,	2–02
13	12	W. Newbury,	3–58	32	30	Newbury,	1–99
8	13	Marblehead,	3–54	28	31	Hamilton,	1–90
10	14	Saugus,	3–53	31	32	Lynnfield,	1–82
19	15	Ipswich,	3–32	27	33	Topsfield,	1–73
17	16	Rowley,	3–32	33	34	Manchester,	1–56
11	17	Danvers,	3–26	34	35	Nahant,	0–57
26	18	Andover,	3–16				

FRANKLIN COUNTY.

For 1875-76, by the State Valuation of 1875.	For 1876-77, by the State Valuation of 1876.	TOWNS.	Percentage of Valuation appropriated to Public Schools—equivalent to mills and hundredths of mills.	For 1875-76, by the State Valuation of 1875.	For 1876-77, by the State Valuation of 1876.	TOWNS.	Percentage of Valuation appropriated to Public Schools—equivalent to mills and hundredths of mills.
1	1	HAWLEY,	$.007-36	22	14	Greenfield,	$.003-79
3	2	Heath,	5–31	17	15	Conway,	3–66
5	3	Shutesbury,	4–61	14	16	Buckland,	3–59
12	4	Shelburne,	4–55	21	17	Ashfield,	3–50
6	5	Charlemont,	4–52	19	18	Leyden,	3–43
7	6	Wendell,	4–30	15	19	Coleraine,	3–21
11	7	Deerfield,	4–29	17	20	New Salem,	3–17
2	8	Monroe,	4–27	20	21	Montague,	2–89
10	9	Erving,	4–22	18	22	Leverett,	2–79
4	10	Rowe,	4–09	23	23	Orange,	2–78
13	11	Sunderland,	3–88	24	24	Bernardston,	2–47
9	12	Northfield,	3–87	25	25	Whately,	2–01
8	13	Warwick,	3–82	26	26	Gill,	1–72

HAMPDEN COUNTY.

1	1	GRANVILLE,	$.004-78	14	12	Springfield,	$.003-08
3	2	Chicopee,	4–12	8	13	Holland,	2–99
2	3	Palmer,	4–08	16	14	W. Springfield,	2–97
6	4	Montgomery,	3–88	12	15	Agawam,	2–75
11	5	Blandford,	3–84	13	16	Westfield,	2–72
7	6	Monson,	3–74	17	17	Tolland,	2–31
15	7	Longmeadow,	3–68	18	18	Holyoke,	2–20
5	8	Wilbraham,	3–52	20	19	Russell,	2–07
9	9	Brimfield,	3–50	19	20	Wales,	2–06
4	10	Chester,	3–48	21	21	Southwick,	1–93
10	11	Ludlow,	3–28				

HAMPSHIRE COUNTY.

2	1	SOUTH HADLEY,	$.004-89	15	13	Granby,	$.002-93
1	2	Pelham,	4–49	17	14	Plainfield,	2–93
3	3	Ware,	4–34	9	15	Amherst,	2–91
11	4	Greenwich,	3–96	13	16	Cummington,	2–83
16	5	Chesterfield,	3–80	19	17	Worthington,	2–73
6	6	Westhampton,	3–79	22	18	Williamsburg,	2–55
14	7	Belchertown,	3–71	7	19	Goshen,	2–35
8	8	Northampton,	3–35	12	20	Prescott,	2–15
5	9	Huntington,	3–29	20	21	Hadley,	2–11
18	10	Easthampton,	3–14	21	22	Enfield,	2–09
4	11	Southampton,	3–08	23	23	Hatfield,	1–89
10	12	Middlefield,	2–94				

MIDDLESEX COUNTY.

For 1875-76, by the State Valuation of 1875.	For 1876-77, by the State Valuation of 1876.	TOWNS.	Percentage of Valuation appropriated to Public Schools—equivalent to mills and hundredths of mills.	For 1875-76, by the State Valuation of 1875.	For 1876-77, by the State Valuation of 1876.	TOWNS.	Percentage of Valuation appropriated to Public Schools—equivalent to mills and hundredths of mills.
2	1	**STONEHAM,**	$.004-65	16	28	Lexington,	$.003-02
1	2	Marlborough,	4-58	43	29	Tewksbury,	2-88
3	3	Hopkinton,	4-35	41	30	Dracut,	2-81
6	4	No. Reading,	3-99	37	31	Westford,	2-81
9	5	Natick,	3-76	33	32	Cambridge,	2-80
10	6	Boxborough,	3-66	34	33	Medford,	2-80
8	7	Chelmsford,	3-65	26	34	Wayland,	2-80
5	8	Hudson,	3-64	25	35	Dunstable,	2-79
28	9	Ashby,	3-59	44	36	Somerville,	2-78
7	10	Reading,	3-58	11	37	Lowell,	2-77
12	11	Malden,	3-51	24	38	Sudbury,	2-66
15	12	Arlington,	3-46	40	39	Lincoln,	2-63
14	13	Holliston,	3-45	38	40	Newton,	2-63
17	14	Tyngsboro',	3-43	48	41	Groton,	2-48
4	15	Townsend,	3-42	47	42	Carlisle,	2-47
18	16	Ashland,	3-37	36	43	Everett,	2-45
21	17	Shirley,	3-31	29	44	Watertown,	2-43
22	18	Framingham,	3-29	27	45	Pepperell,	2-36
46	19	Winchester,	3-20	50	46	Weston,	2-31
30	20	Littleton,	3-19	31	47	Stow,	2-30
13	21	Woburn,	3-18	49	48	Sherborn,	2-28
39	22	Wakefield,	3-10	45	49	Bedford,	2-27
32	23	Waltham,	3-10	51	50	Burlington,	2-21
19	24	Melrose,	3-05	52	51	Acton,	2-20
20	25	Ayer,	3-03	53	52	Belmont,	2-13
23	26	Wilmington,	3-03	42	53	Maynard,	2-13
35	27	Concord,	3-02	54	54	Billerica,	2-01

NANTUCKET COUNTY.

NANTUCKET,	$.002-63

NORFOLK COUNTY.

14	1	**HOLBROOK,**	$.005-48	11	10	Canton,	$.003-87
2	2	Wrentham,	4-92	7	11	Foxborough,	3-66
3	3	Stoughton,	4-47	9	12	Norwood,	3-56
1	4	Walpole,	4-36	10	13	Norfolk,	3-51
8	5	Weymouth,	4-23	15	14	Dedham,	3-44
4	6	Medway,	4-22	13	15	Quincy,	3-32
12	7	Randolph,	4-09	18	16	Dover,	3-03
6	8	Franklin,	4-01	16	17	Needham,	2-90
5	9	Bellingham,	3-98	17	18	Braintree,	2-54

NORFOLK COUNTY—CONCLUDED.

For 1875-76, by the State Valuation of 1875.	For 1876-77, by the State Valuation of 1876.	TOWNS.	Percentage of Valuation appropriated to Public Schools—equivalent to mills and hundredths of mills.	For 1875-76, by the State Valuation of 1875.	For 1876-77, by the State Valuation of 1876.	TOWNS.	Percentage of Valuation appropriated to Public Schools—equivalent to mills and hundredths of mills.
22	19	Medfield,	$.002-53	21	22	Sharon,	$.001-98
20	20	Hyde Park,	2-35	23	23	Milton,	1-51
19	21	Cohasset,	2-23	24	24	Brookline,	1-40

PLYMOUTH COUNTY.

1	1	WAREHAM,	$.005-60	23	15	Pembroke,	$.003-24
10	2	Bridgewater,	4-54	7	16	W. Bridgew'r,	3-17
2	3	Lakeville,	4-45	14	17	Hanover,	3-12
12	4	E. Bridgew'r,	4-29	16	18	Marshfield,	3-04
3	5	Brockton,	4-11	13	19	Halifax,	2-91
5	6	Rockland,	3-83	19	20	Scituate,	2-85
8	7	Plymouth,	3-78	22	21	Duxbury,	2-82
6	8	Plympton,	3-74	15	22	Carver,	2-80
4	9	Abington,	3-61	20	23	Rochester,	2-79
24	10	South Scituate,	3-61	25	24	Kingston,	2-42
9	11	Hingham,	3-57	21	25	Marion,	2-25
18	12	Hanson,	3-37	26	26	Mattapoisett,	1-11
11	13	S. Abington,	3-28	27	27	Hull,	1-05
17	14	Middleboro',	3-25				

SUFFOLK COUNTY.

1	1	CHELSEA,	$.003-11	2	3	Revere,	$.001-75
3	2	Boston,	1-86	4	4	Winthrop,	1-74

WORCESTER COUNTY.

1	1	UPTON,	$.004-62	23	11	Petersham,	$.003-65
15	2	Northbridge,	4-61	17	12	Uxbridge,	3-54
3	3	Dudley,	4-54	12	13	Southboro',	3-50
10	4	Templeton,	4-42	40	14	Barre,	3-43
4	5	Rutland,	4-20	19	15	Blackstone,	3-38
2	6	Douglas,	4-14	20	16	Phillipston,	3-37
5	7	Brookfield,	4-12	14	17	Milford,	3-33
7	8	Paxton,	3-97	41	18	Leicester,	3-32
9	9	W. Brookfield,	3-82	28	19	Gardner,	3-31
6	10	No Brookfield,	3-76	26	20	Oxford,	3-29

WORCESTER COUNTY—CONCLUDED.

For 1875–76, by the State Valuation of 1875.	For 1876–77, by the State Valuation of 1876.	TOWNS.	Percentage of Valuation appropriated to Public Schools—equivalent to mills and hundredths of mills.	For 1875–76, by the State Valuation of 1875.	For 1876–77, by the State Valuation of 1876.	TOWNS.	Percentage of Valuation appropriated to Public Schools—equivalent to mills and hundredths of mills.
34	21	Webster,	$.003-29	38	40	Hubbardston,	$.002-84
31	22	Sturbridge,	3–25	22	41	Oakham,	2–84
37	23	Clinton,	3–20	50	42	Athol,	2–83
36	24	Sterling,	3–20	48	43	Sutton,	2–81
18	25	Westminster,	3–20	25	44	Holden,	2–80
27	26	W. Boylston,	3–15	46	45	Millbury,	2–80
30	27	Westborough,	3–14	57	46	Harvard,	2–76
29	28	New Braintree,	3–11	13	47	Warren,	2–71
44	29	Fitchburg,	3–07	47	48	Shrewsbury,	2–68
8	30	Grafton,	3–06	52	49	Winchendon,	2–64
42	31	Southbridge,	3–05	54	50	Worcester,	2–63
16	32	Charlton,	3–02	51	51	Northborough,	2–59
39	33	Boylston,	2–96	49	52	Berlin,	2–57
11	34	Dana,	2–95	45	53	Lunenburg,	2–43
33	35	Mendon,	2–94	56	54	Bolton,	2–41
24	36	Ashburnham,	2–93	21	55	Spencer,	2–40
32	37	Auburn,	2–90	43	56	Royalston,	2–39
53	38	Lancaster,	2–90	55	57	Leominster,	2–14
35	39	Hardwick,	2–89	58	58	Princeton,	1–82

GRADUATED TABLES — SECOND SERIES.

Showing the different Counties in the State, numerically arranged, according to the Percentage of their Taxable Property, appropriated for the support of Public Schools, for the year 1876–77.

For 1875-76, by the State Valuation of 1875.	For 1876-77, by the State Valuation of 1876.	COUNTIES.	Percentage of Valuation appropriated to Public Schools—equivalent to mills and hundredths of mills.	Amount of money raised by taxes for the support of Public Schools.	Income of Surplus Revenue and of similar funds appropriated for Public Schools.	TOTAL.	Valuation of 1876.	Amount contributed for board and fuel.
1	1	BARNSTABLE, . . .	$.004–12	$62,031 00	$1,010 35	$63,041 35	$15,308,042 00	$121 00
4	2	Franklin, . . .	3–52	55,255 96	1,669 84	56,925 80	16,193,624 00	1,240 69
3	3	Plymouth, . .	3–46	129,790 26	4,012 42	133,802 68	38,707,242 00	12 00
2	4	Hampshire, . .	3–24	79,961 00	2,377 86	82,338 86	25,425,898 00	1,646 00
6	5	Essex, . . .	3–08	494,948 53	6,699 69	501,648 22	163,097,643 00	200 00
5	6	Berkshire,. . .	3–04	108,349 50	1,728 69	110,078 19	36,233,124 00	1,141 73
8	7	Hampden, . .	3–04	211,828 87	2,939 79	214,768 66	70,733,508 00	341 00
9	8	Worcester, . .	2–96	408,000 05	6,544 36	414,544 41	140,018,154 00	304 56
7	9	Middlesex, . .	2–91	819,790 05	5,967 28	825,757 33	283,399,941 00	97 00
11	10	Norfolk, . . .	2–66	240,688 50	4,778 68	245,467 18	92,345,178 00	–
10	11	Nantucket, . .	2–63	6,500 00	–	6,500 00	2,468,010 00	–
12	12	Bristol, . . .	2–45	270,202 04	4,449 51	274,651 55	112,132,026 00	176 00
14	13	Suffolk, . . .	1–89	1,438,205 09	16,972 40	455,177 49	769,917,464 00	–
13	14	Dukes, . . .	1–83	6,125 00	78 24	6,203 24	3,379,577 00	–

AGGREGATE FOR THE STATE.

14 Counties, ...	$.002–48	$4,331,675 85	$59,229 11	$4,390,904 96	$1,769,359,431 00	$5,279 98

GRADUATED TABLES — SECOND SERIES.

Showing the Arrangement of Counties according to their Appropriations, including Voluntary Contributions.

If the Counties are numerically arranged, according to the percentage of their valuations appropriated for Public Schools, voluntary contributions of board and fuel being added to the sum raised by tax and to the income of the Surplus Revenue and other funds, as severally given in the previous Table, the order of precedence will be as follows:—

For 1875-76, by the State Valuation of 1875.	For 1876-77, by the State Valuation of 1876.	COUNTIES.	Percentage of Valuation appropriated to Public Schools—equivalent to mills and hundredths of mills.
1	1	**BARNSTABLE,**	$.004-13
3	2	Franklin,	3-59
4	3	Plymouth,	3-46
2	4	Hampshire,	3-30
6	5	Essex,	3-08
5	6	Berkshire,	3-07
7	7	Hampden,	3-04
9	8	Worcester,	2-96
8	9	Middlesex,	2-91
11	10	Norfolk,	2-66
10	11	Nantucket,	2-63
12	12	Bristol,	2-45
14	13	Suffolk,	1-89
13	14	Dukes,	1-83
Aggregate for the State,			$.002-48

GRADUATED TABLES — Third Series.

The following Table exhibits the ratio of the average attendance for the year in each town to the whole number of children between 5 and 15, according to the returns.

The ratio is expressed in decimals, continued to four figures, the first two of which are separated from the last two by a point, as only the two former are essential to denote the real per cent. Yet the ratios of many towns are so nearly equal, or the difference is so small a fraction, that the first two decimals, with the appropriate mathematical sign appended, indicate no distinction. The continuation of the decimals, therefore, is simply to indicate a priority in cases where, without such continuation, the ratios would appear to be precisely similar.

In several cases the ratio of attendance exhibited in the Table is over 100 per cent. These results, supposing the registers to have been properly kept, and the returns correctly made, are to be thus explained: The average attendance upon all Public Schools, being compared with the whole number of children in the town between 5 and 15, the result may be over 100 per cent., because the attendance of children under 5 and over 15 may more than compensate for the absence of children between those ages. The rank of the towns standing highest in the following table is in accordance with the returns. As the returns are often incorrect, the rank may be too high in some cases.

GRADUATED TABLES—Third Series.

[FOR THE STATE.]

In which all the towns in the State are numerically arranged according to the AVERAGE ATTENDANCE *of their children upon the Public Schools, for the year 1876–77.*

	TOWNS.	No. of children between 5 and 15 years of age in each town.	Average attendance upon School.	Ratio of attendance to the whole No. of children between 5 and 15, expressed in decimals.		TOWNS.	No. of children between 5 and 15 years of age in each town.	Average attendance upon School.	Ratio of attendance to the whole No. of children between 5 and 15, expressed in decimals.
1	ASHBY,	153	196	1.28-10	33	Brookfield,	427	396	.92–74
2	Hawley,	124	136	1.09-67	34	Townsend,	384	354	.92–20
3	Boxborough,	52	57	1.09-61	35	Hubbardston,	264	243	.92–05
4	Greenwich,	78	85	1.08-97	36	Arlington,	772	709	.91–84
5	Kingston,	222	237	1.06-75	37	Upton,	324	297	.91–66
6	Shelburne,	249	255	1.02-41	38	Royalston,	189	173	.91–53
7	Berlin,	197	201	1.02-03	39	Stockbridge,	365	334	.91–51
8	Tyngsboro',	109	110	1.00-91	40	Westport,	554	503	.90–80
9	Westminster,	252	253	1.00-39	41	Lunenburg,	171	155	.90–64
10	Winchester,	512	513	1.00-19	42	Malden,	1,966	1,779	.90–49
11	Heath,	110	110	1.00-00	43	Nahant,	84	76	.90–47
12	Leverett,	121	120	.99-17	44	Ashland,	406	367	.90–39
13	Barre,	357	354	.99-16	45	Wenham,	155	140	.90–32
14	Petersham,	195	193	.98-97	46	Middlefield,	143	129	.90–21
15	Truro,	187	185	.98-93	47	Tisbury,	222	200	.90–09
16	Mendon,	215	212	.98-60	48	Granby,	141	127	.90–07
17	Athol,	595	581	.97-65	49	Brewster,	220	198	.90–00
18	Paxton,	119	116	.97-48	50	Deerfield,	571	513	.89–84
19	Cummington,	156	152	.97-43	51	Templeton,	488	437	.89–55
20	Rutland,	194	189	.97-42	52	Holliston,	558	499	.89–43
21	Carlisle,	75	73	.97-33	53	Chelsea,	3,169	2,829	.89–27
22	Sunderland,	166	159	.95-80	54	No. Reading,	156	139	.89–10
23	Provincet'wn,	787	752	.95-55	55	Amesbury,	637	566	.88–85
24	Reading,	482	458	.95-02	56	Leominster,	807	716	.88–72
25	Littleton,	174	165	.94-83	57	Stoughton,	1,042	923	.88–58
26	Plainfield,	73	69	.94-52	58	Dighton,	295	261	.88–47
27	Bolton,	178	168	.94-38	59	Charlton,	314	277	.88–22
28	E. Bridgew'r,	444	418	.94-14	60	Bellingham,	216	190	.87–96
29	Dalton,	284	267	.94-01	61	Abington,	664	583	.87–80
30	Savoy,	129	121	.93-80	62	Ayer,	375	329	.87–73
31	Merrimac,	326	305	.93-56	63	Monroe,	48	42	.87–50
32	Dana,	101	94	.93-07	64	New Ashford,	32	28	.87–50

	TOWNS.	No. of children between 5 and 15 years of age in each town.	Average attendance upon School.	Ratio of attendance to the whole No. of children between 5 and 15, expressed in decimals.		TOWNS.	No. of children between 5 and 15 years of age in each town.	Average attendance upon School.	Ratio of attendance to the whole No. of children between 5 and 15, expressed in decimals.
65	Windsor, .	103	90	.87–38	113	Eastham, .	139	116	.83–45
66	Wakefield, .	1,053	918	.87–18	114	Sudbury, .	199	166	.83–42
67	Sandwich, .	621	540	.86–95	115	Hancock, .	120	100	.83–33
68	Milton, . .	420	365	.86–90	116	Maynard, .	372	310	.83–33
69	Lynnfield, .	122	106	.86–88	117	Oakham, .	156	130	.83–33
70	Dennis, .	628	545	.86–75	118	Northfield, .	265	220	.83–02
71	Bridgewater,	713	618	.86–68	119	So. Hadley, .	618	513	.83–01
72	Medfield, .	154	133	.86–36	120	Medford, .	1,205	1,000	.82–99
73	Manchester, .	263	227	.86–31	121	Boxford, .	111	92	.82–88
74	Fairhaven, .	460	397	.86–30	122	Chilmark, .	81	67	.82–73
75	Somerville, .	4,028	3,472	86–20	123	Brookline, .	1,190	982	.82–52
76	Swansea, .	208	179	.86–06	124	Warwick, .	120	99	.82–50
77	Charlemont, .	157	135	.85–99	125	Shutesbury, .	107	88	.82–24
78	Stow, . .	185	159	.85–95	126	Westfield, .	1,399	1,149	.82–13
79	Rowe, . .	118	101	.85–60	127	Barnstable, .	776	635	.81–83
80	Gill, . .	111	95	.85–59	128	Medway, .	834	682	.81–77
81	Lancaster, .	283	242	·85–51	129	Swampscott,	356	291	.81–74
82	Newton, .	2,853	2,439	.85–49	130	Rockland, .	968	791	.81–71
83	Florida, .	110	94	.85–45	131	Norwood, .	399	326	.81–70
84	Ipswich, .	551	470	.85–30	132	Wales, . .	142	116	.81–69
85	Enfield, .	183	156	.85–25	133	Plymouth, .	1,196	976	.81–60
86	Amherst, .	641	546	.85–18	134	Coleraine, .	325	265	.81–54
87	Watertown, .	871	740	.84–96	135	Acton, . .	296	241	.81–42
88	Worthington,	146	124	.84–93	136	N. Brookfield,	761	619	.81–34
89	Seekonk, .	192	163	.84–90	137	Gloucester, .	3,691	2,994	.81–12
90	Orange, .	397	337	.84–89	138	Weston, .	201	163	.81–09
91	Framingham,	938	796	.84–86	139	Saugus, .	465	377	.81–08
92	Boylston, .	164	139	.84–76	140	Wrentham, .	409	331	.80–93
93	Berkley, .	118	100	.84–74	141	Lakeville, .	204	165	.80–88
94	Hudson, .	748	633	.84–63	142	Fitchburg, .	2,208	1,783	.80–75
95	Falmouth, .	338	286	.84–62	143	Danvers, .	1,117	901	.80–66
96	Phillipston, .	117	99	.84–62	144	Duxbury, .	376	303	.80–59
97	Concord, .	447	378	.84–56	145	Easthampt'n,	637	513	.80–53
98	Melrose, .	815	689	.84–54	146	Winthrop, .	117	94	.80–34
99	Walpole, .	328	277	.84–45	147	W. Newbury,	371	298	.80–32
100	Orleans, .	225	190	.84–44	148	Waltham, .	1,786	1,432	.80–18
101	Marshfield, .	295	249	.84–41	149	Erving, .	146	117	.80–14
102	Harvard, .	243	205	.84–36	150	Alford, . .	55	44	.80–00
103	Blandford, .	178	150	.84–27	151	Foxborough,	498	398	.79–92
104	Belmont, .	402	338	.84–08	152	Holbrook, .	378	301	.79–63
105	Weymouth, .	1,981	1,665	.84–05	153	Andover, .	867	690	.79–58
106	Warren, .	525	441	.84–00	154	Haverhill, .	2,608	2,075	.79–56
107	Groveland, .	336	282	.83–93	155	Lee, . .	833	661	.79–35
108	Quincy, .	1,670	1,401	.83–89	156	New Bedford,	4,002	3,175	.79–34
109	Wayland, .	304	255	.83–88	157	Scituate, .	474	376	.79–32
110	Wilmington,	166	139	.83–73	158	Montague, .	616	488	.79–22
111	Goshen, .	67	56	.83–58	159	Shrewsbury,	283	224	.79–15
112	Chester, .	255	213	.83–53	160	Franklin, .	570	451	.79–12

	TOWNS.	No. of children between 5 and 15 years of age in each town.	Average attendance upon School.	Ratio of attendance to the whole No. of children between 5 and 15, expressed in decimals.
161	Salisbury, .	678	537	.79-06
162	Cambridge, .	8,218	6,492	.79-00
163	Greenfield, .	598	472	.78-93
164	Northboro', .	232	183	.78-90
165	So. Scituate, .	336	265	.78-87
166	Stoneham, .	918	723	.78-76
167	Worcester, .	8,801	6,926	.78-70
168	N. Braintree,	107	84	.78-50
169	Princeton, .	200	157	.78-50
170	Lenox, . .	404	317	.78-47
171	W. Brookfield,	376	295	.78-46
172	Russell, .	111	87	.78-37
173	Yarmouth, .	351	275	.78-35
174	New Salem, .	157	124	.78-34
175	Brockton, .	1,941	1,520	.78-31
176	Otis, . .	204	159	.77-94
177	Hyde Park, .	1,228	955	.77-77
178	Peabody, .	1,419	1,102	.77-66
179	Hopkinton, .	1,047	813	.77-65
180	Montgomery,	58	45	.77-59
181	Buckland, .	421	326	.77-43
182	Springfield, .	5,408	4,183	.77-35
183	Middleton, .	185	143	.77-30
184	Beverly, .	1,332	1,029	.77-25
185	W. Bridgew'r,	332	256	.77-11
186	Hadley, .	423	326	.77-07
187	Needham, .	841	648	.77-05
188	Raynham, .	307	236	.76-87
189	No. Andover,	527	404	.76-66
190	Southboro', .	379	290	.76-52
191	Harwich, .	692	529	.76-45
192	Mansfield, .	481	367	.76-30
193	Bernardston,	156	119	.76-28
194	Dedham, .	1,133	864	.76-26
195	Milford, .	2,223	1,695	.76-25
196	Oxford, .	484	369	.76-24
197	Ashfield, .	222	169	.76-13
198	Grafton, .	842	641	.76-13
199	Carver, . .	204	155	.75-98
200	Natick, . .	1,574	1,196	.75-98
201	Rockport, .	793	602	.75-91
202	Marion, .	145	110	.75-86
203	Westboro', .	786	596	.75-83
204	Edgartown, .	355	269	.75-77
205	Rochester, .	197	149	.75-63
206	Pepperell, .	340	257	.75-59
207	Uxbridge, .	626	473	.75-56
208	Bedford, .	167	126	.75-45
209	Dartmouth, .	517	390	.75-44
210	Hull, . .	57	43	.75-44
211	Lanesboro', .	268	202	.75-37
212	Chelmsford, .	503	379	.75-35
213	Hardwick, .	425	320	.75-29
214	Easton, . .	793	597	.75-28
215	Hamilton, .	141	106	.75-18
216	Rehoboth, .	326	245	.75-15
217	Bradford, .	378	284	.75-13
218	Hinsdale, .	325	244	.75-08
219	Marblehead,	1,564	1,174	.75-06
220	Marlboro', .	1,932	1,450	.75-05
221	Acushnet, . .	192	144	.75-00
222	Gardner, .	659	494	.74-96
223	Cheshire, .	355	266	.74-93
224	G. Barrington,	893	669	.74-92
225	Longmeadow,	252	188	.74-60
226	Essex, . .	338	252	.74-56
227	Granville, .	279	208	.74-55
228	N. Marlboro',	439	327	.74-50
229	W. Stockb'ge,	423	315	.74-47
230	Ashburnham,	411	306	.74-45
231	Mattapoisett,	230	171	.74-35
232	Northampton,	2,127	1,581	.74-33
233	Prescott, .	101	75	.74-26
234	Groton, .	415	308	.74-22
235	Blackstone, .	967	717	.74-15
236	Attleboro', .	1,508	1,118	.74-14
237	Wareham, .	614	455	.74-10
238	Webster,	708	524	.74-01
239	W. Spring'ld,	674	498	.73-90
240	Leicester, .	540	399	.73-89
241	Clinton, .	1,447	1,068	.73-81
242	Chatham, .	488	359	.73-56
243	Dracut, .	194	142	.73-20
244	Becket, . .	316	231	.73-10
245	Methuen, .	668	498	.73-05
246	Sandisfield, .	215	157	.73-02
247	Boston, . .	58636	42797	.72-99
248	Taunton, .	3,632	2,649	.72-94
249	Chesterfield,	147	107	.72-80
250	Middleboro',	881	640	.72-64
251	Everett, .	697	506	.72-60
252	Holland, .	62	45	.72-58
253	Westford, .	305	221	.72-46
254	Hanson, .	210	152	.72-38
255	Norton, .	252	182	.72-22
256	Lincoln, .	136	98	.72-06

	TOWNS.	No. of children between 5 and 15 years of age in each town.	Average attendance upon School.	Ratio of attendance to the whole No. of children between 5 and 15, expressed in decimals.
257	Tewksbury,	200	144	.72-00
258	Lynn,	5,924	4,264	.71-98
259	Hingham,	792	570	.71-97
260	Wellfleet,	410	295	.71-95
261	Northbridge,	825	593	.71-89
262	Pembroke,	234	168	.71-79
263	Huntington,	194	139	.71-65
264	So. Abington,	462	331	.71-65
265	Cohasset,	458	328	.71-62
266	Wendell,	81	58	.71-60
267	Southwick,	193	138	.71-50
268	Lexington,	499	356	.71-34
269	Woburn,	2,198	1,562	.71-07
270	Braintree,	741	526	.70-99
271	Sherborn,	162	115	.70-99
272	Lowell,	7,400	5,249	.70-93
273	Dover,	120	85	.70-83
274	Somerset,	390	276	.70-77
275	Winchendon,	740	522	.70-54
276	Revere,	314	221	.70-38
277	Billerica,	363	255	.70-25
278	Sterling,	285	200	70-18
279	Canton,	944	662	.70-13
280	Randolph,	810	567	.70-00
281	Southampton,	190	133	.70-00
282	Agawam,	368	256	.69-56
283	Halifax,	78	54	.69-23
284	Wilbraham,	409	282	.68-95
285	Newbury,	225	155	.68-89
286	Spencer,	1,058	728	.68-81
287	Conway,	282	194	.68-79
288	Dunstable,	80	55	.68-75
289	Hanover,	336	231	.68-75
290	Leyden,	112	77	.68-75
291	Tyringham,	112	77	.68-75
292	Brimfield,	215	147	.68-37
293	Gay Head,	37	25	.67-57
294	Pelham,	116	78	.67-24
295	Dudley,	610	410	.67-21
296	W. Boylston,	623	418	.67-09
297	Ludlow,	215	144	.66-98
298	Newburyp'rt,	2,505	1,665	.66-47
299	Salem,	4,430	2,938	.66-32
300	Sharon,	280	185	.66-07
301	Palmer,	902	593	.65-74
302	Burlington,	99	65	.65-66
303	Nantucket,	604	396	.65-56
304	Pittsfield,	2,558	1,676	.65-52
305	Hatfield,	313	205	.65-50
306	Washington,	135	88	.65-19
307	Peru,	104	67	.64-42
308	Rowley,	205	132	.64-40
309	Douglas,	452	288	.63-72
310	Whately,	212	135	.63-68
311	Shirley,	225	143	.63-56
312	Freetown,	252	160	.63-49
313	Norfolk,	188	119	.63-30
314	Auburn,	286	181	.63-29
315	Lawrence,	5,634	3,516	.62-41
316	Ware,	950	587	.61-79
317	Southbridge,	1,145	704	.61-48
318	Williamsb'g,	464	284	.61-21
319	Holden,	469	286	.60-98
320	Sheffield,	468	285	.60-90
321	Monterey,	163	99	.60-74
322	Plympton,	163	99	.60-74
323	Adams,	3,171	1,921	.60-58
324	Topsfield,	220	133	.60-45
325	Tolland,	82	49	.59-75
326	Sturbridge,	391	233	.59-59
327	Monson,	632	372	.58-86
328	Egremont,	145	84	.57-93
329	Richmond,	248	143	.57-66
330	Fall River,	8,509	4,843	.56-92
331	Chicopee,	1,970	1,103	.55-99
332	Belchertown,	650	362	.55-70
333	Williamst'wn,	724	400	.55-25
334	Westhampt'n,	127	70	.55-12
335	Clarksburg,	169	93	.55-03
336	Sutton,	662	349	.52-72
337	Gosnold,	23	11	.47-83
338	Millbury,	930	395	.42-47
339	Holyoke,	2,983	1,141	.38-25
340	Mt. Wash'ton,	43	14	.32-56
341	Mashpee,	68	21	.30-88
342	Georgetown,	365	108	.29-60

GRADUATED TABLES—Third Series.

[COUNTY TABLES.]

In which all the Towns in the respective Counties in the State are numerically arranged, according to the AVERAGE ATTENDANCE *of their children upon the Public Schools, for the year 1876–77.*

[For an explanation of the principles on which these Tables are constructed, see *ante,* p. cv.]

BARNSTABLE COUNTY.

	TOWNS.	No. of children between 5 and 15 years of age in each town.	Average attendance upon School.	Ratio of attendance to the whole No. of children between 5 and 15, expressed in decimals.		TOWNS.	No. of children between 5 and 15 years of age in each town.	Average attendance upon School.	Ratio of attendance to the whole No. of children between 5 and 15, expressed in decimals.
1	**TRURO,** . .	187	185	.98–93	8	Eastham, .	139	116	.83–45
2	Provincet'wn,	787	752	.95–55	9	Barnstable, .	776	635	.81–83
3	Brewster, .	220	198	.90–00	10	Yarmouth, .	351	275	.78–35
4	Sandwich, .	621	540	.86–95	11	Harwich, .	692	529	.76–45
5	Dennis, .	628	545	.86–78	12	Chatham, .	488	359	.73–56
6	Falmouth, .	338	286	.84–62	13	Wellfleet, .	410	295	.71–95
7	Orleans, .	225	190	.84–44	14	Mashpee, .	68	21	.30–88

BERKSHIRE COUNTY.

1	**DALTON,** . .	284	267	.94–01	17	W. Stockb'ge,	423	315	.74–47
2	Savoy, . .	129	121	.93–80	18	Becket, . .	316	231	.73–10
3	Stockbridge,	365	334	.91–51	19	Sandisfield, .	215	157	.73–02
4	New Ashford,	32	28	.87–50	20	Tyringham, .	112	77	.68–75
5	Windsor, .	103	90	.87–38	21	Pittsfield, .	2,558	1,676	.65–52
6	Florida, .	110	94	.85–45	22	Washington,	135	88	.65–19
7	Hancock, .	120	100	.83–33	23	Peru, . .	104	67	.64–42
8	Alford, . .	55	44	.80–00	24	Sheffield, .	468	285	.60–90
9	Lee, . .	833	661	.79–35	25	Monterey, .	163	99	.60–74
10	Lenox, . .	404	317	.78–47	26	Adams, .	3,171	1,921	.60–58
11	Otis, . .	204	159	.77–94	27	Egremont, .	145	84	.57–93
12	Lanesboro', .	268	202	.75–37	28	Richmond, .	248	143	.57–66
13	Hinsdale, .	325	244	.75–08	29	Williamsto'n,	724	400	.55–25
14	Cheshire, .	355	266	.74–93	30	Clarksburg, .	169	93	.55–03
15	Gt Barringt'n,	893	669	.74–92	31	Mt. Washin'n,	43	14	.32–56
16	N. Marlboro',	439	327	.74–50					

BRISTOL COUNTY.

	TOWNS.	No. of children between 5 and 15 years of age in each town.	Average attendance upon School.	Ratio of attendance to the whole No. of children between 5 and 15, expressed in decimals.		TOWNS.	No. of children between 5 and 15 years of age in each town.	Average attendance upon School.	Ratio of attendance to the whole No. of children between 5 and 15, expressed in decimals.
1	WESTPORT,	554	503	.90–80	11	Easton,	793	597	.75–28
2	Dighton,	295	261	.88–47	12	Rehoboth,	326	245	.75–15
3	Fairhaven,	460	397	.86–30	13	Acushnet,	192	144	.75–00
4	Swansea,	208	179	.86–06	14	Attleboro',	1,508	1,118	.74–14
5	Seekonk,	192	163	.84–90	15	Taunton,	3,632	2,649	.72–94
6	Berkley,	118	100	.84–74	16	Norton,	252	182	.72–22
7	New Bedford,	4,002	3,175	.79–34	17	Somerset,	390	276	.70–77
8	Raynham,	307	236	.76–87	18	Freetown,	252	160	.63–49
9	Mansfield,	481	367	.76–30	19	Fall River,	8,509	4,843	.56–92
10	Dartmouth,	517	390	.75–44					

DUKES COUNTY.

1	TISBURY,	222	200	.90–09	4	Gay Head,	37	25	.67–57
2	Chilmark,	81	67	.82–73	5	Gosnold,	23	11	.47–83
3	Edgartown,	355	269	.75–77					

ESSEX COUNTY.

1	MERRIMAC,	326	305	.93–56	19	Middleton,	185	143	.77–30
2	Nahant,	84	76	.90–47	20	Beverly,	1,332	1,029	.77–25
3	Wenham,	155	140	.90–32	21	No. Andover,	527	404	.76–66
4	Amesbury,	637	566	.88–85	22	Rockport,	793	602	.75–91
5	Lynnfield,	122	106	.86–88	23	Hamilton,	141	106	.75–18
6	Manchester,	263	227	.86–31	24	Bradford,	378	284	.75–13
7	Ipswich,	551	470	.85–30	25	Marblehead,	1,564	1,174	.75–06
8	Groveland,	336	282	.83–93	26	Essex,	338	252	.74–56
9	Boxford,	111	92	.82–88	27	Methuen,	668	498	.73–05
10	Swampscott,	356	291	.81–74	28	Lynn,	5,924	4,264	.71–98
11	Gloucester,	3,691	2,994	.81–12	29	Newbury,	225	155	.68–89
12	Saugus,	465	377	.81–08	30	Newburyp't,	2,505	1,665	.66–47
13	Danvers,	1,117	901	.80–66	31	Salem,	4,430	2,938	.66–32
14	W. Newbury,	371	298	.80–32	32	Rowley,	205	132	.64–40
15	Andover,	867	690	.79–58	33	Lawrence,	5,634	3,516	.62–41
16	Haverhill,	2,608	2,075	.79–56	34	Topsfield,	220	133	.60–45
17	Salisbury,	678	537	.79–06	35	Georgetown,	365	108	.29–60
18	Peabody,	1,419	1,102	.77–66					

FRANKLIN COUNTY.

	TOWNS.	No. of children between 5 and 15 years of age in each town.	Average attendance upon School.	Ratio of attendance to the whole No. of children between 5 and 15, expressed in decimals.		TOWNS.	No. of children between 5 and 15 years of age in each town.	Average attendance upon School.	Ratio of attendance to the whole No. of children between 5 and 15, expressed in decimals.
1	HAWLEY,	124	136	1.09-67	14	Shutesbury,	107	88	.82–24
2	Shelburne,	249	255	1.02-41	15	Coleraine,	325	265	.81–54
3	Heath,	110	110	1.00-00	16	Erving,	146	117	.80–14
4	Leverett,	121	120	.99–17	17	Montague,	616	488	.79–22
5	Sunderland,	166	159	.95–80	18	Greenfield,	598	472	.78–93
6	Deerfield,	571	513	.89–84	19	New Salem,	157	124	.78–34
7	Monroe,	48	42	.87–50	20	Buckland,	421	326	.77–43
8	Charlemont,	157	135	.85–99	21	Bernardston,	156	119	.76–28
9	Rowe,	118	101	.85–60	22	Ashfield,	222	169	.76–13
10	Gill,	111	95	.85–59	23	Wendell,	81	58	.71–60
11	Orange,	397	337	.84–89	24	Conway,	282	194	.68–79
12	Northfield,	265	220	.83–02	25	Leyden,	112	77	.68–75
13	Warwick,	120	99	.82–50	26	Whately,	212	135	.63–68

HAMPDEN COUNTY.

1	BLANDFORD,	178	150	.84–27	12	Southwick,	193	138	.71–50
2	Chester,	255	213	.83–53	13	Agawam,	368	256	.69–56
3	Westfield,	1,399	1,149	.82–13	14	Wilbraham,	409	282	.68–95
4	Wales,	142	116	.81–69	15	Brimfield,	215	147	.68–37
5	Russell,	111	87	.78–37	16	Ludlow,	215	144	.66–98
6	Montgomery,	58	45	.77–59	17	Palmer,	902	593	.65–74
7	Springfield,	5,408	4,183	.77–35	18	Tolland,	82	49	.59–75
8	Longmead'w,	252	188	.74–60	19	Monson,	632	372	.58–86
9	Granville,	279	208	.74–55	20	Chicopee,	1,970	1,103	.55–99
10	W. Spring'ld,	674	498	.73–90	21	Holyoke,	2,983	1,141	.38–25
11	Holland,	62	45	.72–58					

HAMPSHIRE COUNTY.

1	GREENWICH,	78	85	1.08-97	13	Northampt'n,	2,127	1,581	.74–33
2	Cummingt'n,	156	152	.97–43	14	Prescott,	101	75	.74–26
3	Plainfield,	73	69	.94–52	15	Chesterfield,	147	107	.72–80
4	Middlefield,	143	129	.90–21	16	Huntington,	194	139	.71–65
5	Granby,	141	127	.90–07	17	Southampt'n,	190	133	.70–00
6	Enfield,	183	156	.85–25	18	Pelham,	116	78	.67–24
7	Amherst,	641	546	.85–18	19	Hatfield,	313	205	.65–50
8	Worthington,	146	124	.84–93	20	Ware,	950	587	.61–79
9	Goshen,	67	56	.83–58	21	Williamsb'rg,	464	284	.61–21
10	So. Hadley,	618	513	.83–01	22	Belchertown,	650	362	.55–70
11	Easthampt'n,	637	513	.80–53	23	Westhampt'n,	127	70	.55–12
12	Hadley,	423	326	.77–07					

MIDDLESEX COUNTY.

	TOWNS.	No. of children between 5 and 15 years of age in each town.	Average attendance upon School.	Ratio of attendance to the whole No. of children between 5 and 15, expressed in decimals.		TOWNS.	No. of children between 5 and 15 years of age in each town.	Average attendance upon School.	Ratio of attendance to the whole No. of children between 5 and 15, expressed in decimals.
1	ASHBY,	153	196	1.28-10	28	Maynard,	372	310	.83-33
2	Boxborough,	52	57	1.09-61	29	Medford,	1,205	1,000	.82-99
3	Tyngsboro',	109	110	1.00-91	30	Acton,	296	241	.81-42
4	Winchester,	512	513	1.00-19	31	Weston,	201	163	.81-09
5	Carlisle,	75	73	.97-33	32	Waltham,	1,786	1,432	.80-18
6	Reading,	482	458	.95-02	33	Cambridge,	8,218	6,492	.79-00
7	Littleton,	174	165	.94-83	34	Stoneham,	918	723	.78-76
8	Townsend,	384	354	.92-20	35	Hopkinton,	1,047	813	.77-65
9	Arlington,	772	709	.91-84	36	Natick,	1,574	1,196	.75-98
10	Malden,	1,966	1,779	.90-49	37	Pepperell,	340	257	.75-59
11	Ashland,	406	367	.90-39	38	Bedford,	167	126	.75-45
12	Holliston,	558	499	.89-43	39	Chelmsford,	503	379	.75-35
13	No. Reading,	156	139	.89-10	40	Marlborough,	1,932	1,450	.75-05
14	Ayer,	375	329	.87-73	41	Groton,	415	308	.74-22
15	Wakefield,	1,053	918	.87-18	42	Dracut,	194	142	.73-20
16	Somerville,	4,028	3,472	.86-20	43	Everett,	697	506	.72-60
17	Stow,	185	159	.85-95	44	Westford,	305	221	.72-46
18	Newton,	2,853	2,439	.85-49	55	Lincoln,	136	98	.72-06
19	Watertown,	871	740	.84-96	46	Tewksbury,	200	144	.72-00
20	Framingham,	938	796	.84-86	47	Lexington,	499	356	.71-34
21	Hudson,	748	633	.84-63	48	Woburn,	2,198	1,562	.71-07
22	Concord,	447	378	.84-56	49	Sherborn,	162	115	.70-99
23	Melrose,	815	689	.84-54	50	Lowell,	7,400	5,249	.70-93
24	Belmont,	402	338	.84-08	51	Billerica,	363	255	.70-25
25	Wayland,	304	255	.83-88	52	Dunstable,	80	55	.68-75
26	Wilmington,	166	139	.83-73	53	Burlington,	99	65	.65-66
27	Sudbury,	199	166	.83-42	54	Shirley,	225	143	.63-56

NANTUCKET COUNTY.

NANTUCKET,	604	396	.65-56

NORFOLK COUNTY.

1	STOUGHTON,	1,042	923	.88-58	7	Quincy,	1,670	1,401	.83-89
2	Bellingham,	216	190	.87-96	8	Brookline,	1,190	982	.82-52
3	Milton,	420	365	.86-90	9	Medway,	834	682	.81-77
4	Medfield,	154	133	.86-36	10	Norwood,	399	326	.81-70
5	Walpole,	328	277	.84-45	11	Wrentham,	409	331	.80-93
6	Weymouth,	1,981	1,665	.84-05	12	Foxborough,	498	398	.79-92

NORFOLK COUNTY—Concluded.

	TOWNS.	No. of children between 5 and 15 years of age in each town.	Average attendance upon School.	Ratio of attendance to the whole No. of children between 5 and 15, expressed in decimals.		TOWNS.	No. of children between 5 and 15 years of age in each town.	Average attendance upon School.	Ratio of attendance to the whole No. of children between 5 and 15, expressed in decimals.
13	Holbrook, .	378	301	.79–63	19	Braintree, .	741	526	.70–99
14	Franklin, .	570	451	.79–12	20	Dover, . .	120	85	.70–83
15	Hyde Park, .	1,228	955	.77–77	21	Canton, .	944	662	.70–13
16	Needham, .	841	648	.77–05	22	Randolph, .	810	567	.70–00
17	Dedham, .	1,133	864	.76–26	23	Sharon, .	280	185	.66–07
18	Cohasset, .	458	328	.71–62	24	Norfolk, .	188	119	.63–30

PLYMOUTH COUNTY.

1	KINGSTON, . .	222	237	1.06-75	15	Marion, .	145	110	.75–86
2	E Bridgew'r,	444	418	.94–14	16	Rochester, .	197	149	.75–63
3	Abington, .	664	583	.87-80	17	Hull, . .	57	43	.75–44
4	Bridgewater,	713	618	.86–68	18	Mattapoisett,	230	171	.74–35
5	Marshfield, .	295	249	.84–41	19	Wareham, .	614	455	.74–10
6	Rockland, .	968	791	.81–71	20	Middleboro',	881	640	.72-64
7	Plymouth, .	1,196	976	.81–60	21	Hanson,	210	152	.72–38
8	Lakeville, .	204	165	.80–88	22	Hingham, .	792	570	.71–97
9	Duxbury, .	376	303	.80–59	23	Pembroke, .	234	168	.71–79
10	Scituate, .	474	376	.79–32	24	So. Abington,	462	331	.71–65
11	So. Scituate, .	336	265	.78–87	25	Halifax, .	78	54	.69–23
12	Brockton, .	1,941	1,520	.78–31	26	Hanover, .	336	231	.68–75
13	W. Bridgew'r,	332	256	.77–11	27	Plympton, .	163	99	.60–74
14	Carver, .	204	155	.75–98					

SUFFOLK COUNTY.

1	CHELSEA, . .	3,169	2,829	.89–27	3	Boston, . .	58636	42797	.72–99
2	Winthrop, .	117	94	.80–34	4	Revere, .	314	221	.70–38

WORCESTER COUNTY.

1	BERLIN, . .	197	201	1.02-03	6	Athol, . .	595	581	.97–65
2	Westminster,	252	253	1.00-39	7	Paxton, .	119	116	.97–48
3	Barre, . .	357	354	.99–16	8	Rutland, .	194	189	.97–42
4	Petersham, .	195	193	.98–97	9	Bolton, . .	178	168	.94–38
5	Mendon, .	215	212	.98–60	10	Dana, . .	101	94	.93–07

WORCESTER COUNTY—CONCLUDED.

	TOWNS.	No. of children between 5 and 15 years of age in each town.	Average attendance upon School.	Ratio of attendance to the whole No. of children between 5 and 15, expressed in decimals.		TOWNS.	No. of children between 5 and 15 years of age in each town.	Average attendance upon School.	Ratio of attendance to the whole No. of children between 5 and 15, expressed in decimals.
11	Brookfield, .	427	396	.92–74	35	Oxford, .	484	369	.76–24
12	Hubbardston,	264	243	.92–05	36	Grafton, .	842	641	.76–13
13	Upton, . .	324	297	.91–66	37	Westborough,	786	596	.75–83
14	Royalston, .	189	173	.91–53	38	Uxbridge, .	626	473	.75–56
15	Lunenburg, .	171	155	.90–64	39	Hardwick, .	425	320	.75–29
16	Templeton, .	488	437	.89–55	40	Gardner, .	659	494	.74–96
17	Leominster, .	807	716	.88–72	41	Ashburnham,	411	306	.74–45
18	Charlton, .	314	277	.88–22	42	Blackstone, .	967	717	.74–15
19	Lancaster, .	283	242	.85–51	43	Webster, .	708	524	.74–01
20	Boylston, .	164	139	.84–76	44	Leicester, .	540	399	.73–89
21	Phillipston, .	117	99	.84–62	45	Clinton, .	1,447	1,068	.73–81
22	Harvard, .	243	205	.84–36	46	Northbridge,	825	593	.71–89
23	Warren, .	525	441	.84–00	47	Winchendon,	740	522	.70–54
24	Oakham, .	156	130	.83–33	48	Sterling, .	285	200	.70–18
25	N. Brookfield,	761	619	.81–34	49	Spencer, .	1,058	728	.68–81
26	Fitchburg, .	2,208	1,783	.80–75	50	Dudley, .	610	410	.67–21
27	Shrewsbury,.	283	224	.79–15	51	W. Boylston,	623	418	.67–09
28	Northboro', .	232	183	.78–90	52	Douglas, .	452	288	.63–72
29	Worcester, .	8,801	6,926	.78–70	53	Auburn, .	286	181	.63–29
30	N. Braintree,	107	84	.78–50	54	Southbridge,	1,145	704	.61–48
31	Princeton, .	200	157	.78–50	55	Holden, .	469	286	.60–98
32	W. Brookfield,	376	295	.78–46	56	Sturbridge, .	391	233	.59–59
33	Southboro', .	379	290	.76–52	57	Sutton, . .	662	349	.52–72
34	Milford, .	2,223	1,695	.76–25	58	Millbury, .	930	395	.42–47

TABLE in which all the Counties are numerically arranged, according to the AVERAGE ATTENDANCE *of their children upon the Public Schools for the year 1876–77.*

For 1875–76.	For 1876–77.	COUNTIES.	Ratio of Attendance.
2	1	BARNSTABLE, ...	.83–07
3	2	Franklin, ...	.82–68
4	3	Middlesex, ...	.80–20
1	4	Dukes, ...	.79–67
6	5	Norfolk, ...	.79–39
5	6	Plymouth, ...	.78–98
7	7	Worcester, ...	.76–73
9	8	Hampshire, ...	.75–63
12	9	Suffolk, ...	.73–82
10	10	Essex, ...	.73–08
11	11	Bristol, ...	.69–54
13	12	Berkshire, ...	.68–81
14	13	Hampden, ...	.66–16
8	14	Nantucket, ...	.65–56

AVERAGE ATTENDANCE FOR THE STATE.

Number of children between 5 and 15 years of age in the State, .	296,375
Average attendance, ...	222,704
Ratio of attendance to the whole number between 5 and 15 years of age, expressed in decimals, ...	.75–14

INDEX.

INDEX.

REPORT OF THE BOARD OF EDUCATION AND ITS SECRETARY, WITH APPENDIX.

- Adams, John, opinion of State education, 156
- Agents of Board, number reduced, 7, 96
  - How occupied, 97
  - Improvements in teaching suggested by, 98
  - George A. Walton, Report of, 104–111
  - E. A. Hubbard, Report of, 112–117
  - John Kneeland, Report of, 118–121
- Aldrich, Hon. P. Emory, Address of, 152
  - Subject stated, 152
  - State defined, 152
  - Nation, Milton's definition of, 153
  - State, Burke's definition of, 153
  - State, Lieber's definition of, 154
  - State rights and duties in relation to education, 154
  - State, what education to provide for, 155
  - State, settled policy of, to support schools of every grade, 155–156
  - This policy should not be abandoned, 155
  - State education, John Adams's opinion of, 156
    - Madison's opinion of, 156
    - Jefferson's opinion of, 158
    - Constitution of Massachusetts concerning, 159
    - Constitution of New Hampshire concerning, 159
    - Massachusetts grants for higher education, 160
    - State support of, attempts to change the policy of, 162
    - objections to, answered, 162
    - State, how to provide for, three principal methods, 169
    - Horace Mann, definition of, 170
- Associations of School Committees, 70, 111
- Asylum for the Blind, 60
- Attendance upon Public Schools compulsory, insufficiently enforced, 114

- Board of Education, usefulness of, 8
  - Secretary's Report, 47
- Bridgewater Normal School, Report of Visitors of, 20
  - Commendation of, 20
  - Statistics of, 20
  - Course of study, 22
  - Apparatus new, 23
  - Improvements needed, 24
  - Results of work in, 91

Centennial Exhibition creditable to the State, 5
Clarke Institution for Deaf-Mutes, extracts from Report of, 55
    Visitors, Report of, 56
Constitution of Massachusetts concerning State education, 159
    of New Hampshire concerning State education, 159
Course of studies adopted by Hampshire East Association, 135–151
Cousin on school supervision in the Netherlands, 67

Deaf-mutes, number of Massachusetts pupils, 51
    Circular to School Committees concerning, 52
    Number of, in the world, estimated, 54
    Extracts from Report of Hartford Asylum, 52
        of Clarke Institution, 54
        of Horace Mann School, 59
Deaf-mute schools, supervision of, 4
Dickinson, John W., elected Secretary of the Board, 8
Drawing, general introduction in schools, 4

Eastern Hampshire Association, course of studies adopted by, 72
Education, how to provide for, by the State, three methods, 169
    Horace Mann's definition of, 017
Education, higher, State support of, attempt to change policy, 162
    State support, objections to, answered, 162
England and Germany, systems of education in, compared, 5
Essex County School Committee's Association, 70
Europe, Normal Schools in, increase of, 87

Financial statement, Treasurer of the Board, by, 123
Framingham Normal School, Report of Visitors of, 13
    Statistics of, 13
    Lectures to, delivered, 14
    Library additions, 14
    Model school connected with, 14
    Results of work in, 91
Franklin County School-committee's Association, 70
    Resolutions of, in favor of county superintendency, 73
Fraser, Rev. James, Commissioner of English Schools, observations of, 92
Free Institute, Worcester, 173

Galloway, Hon. S., of Ohio, on school supervision, 67
Germany and England, systems of education in, compared, 5

Hampden County School-committee's Association, 70
Hampshire County School-committee's Association, 70
High Schools, definition of, 80
    Objections to, answered, 81
    Argument for, 82
    Objections to, further answered, 84
    Law concerning number of, 84
Hubbard, E. A., Agent, Report of, 112
    Account of services, 112
    School visitation, better method suggested, 112
    Number in schools, inequality of, 113
    Insufficient appropriations, 114
    Supervision, lack of, 114
    Institutes attended, 115
    Institutes, better method of holding, recommended, 116

Industrial School Association, 219
  When organized, 219
  Two courses of study presented, 219
  Course adopted, 220
  Course adopted essentially the Russian, 220
  Lessons given, eleven, 221
      first, illustrated, 221
  Day school for carving and modelling established, 224
Institutes, Teachers', number held in 1877, 7
  Attendance upon, 7
  Success of, 7
  Where held, 94
  Interest in, 94
  How conducted, 94–109
  Number attending, 95
  Exercises of, 95
  Lecturers and teachers assisting in, 96
  Attended by G. A. Walton, Agent, 108
  Attended by E. A. Hubbard, Agent, 115
  Improved method of, suggested, 116

Jefferson, Thomas, State education concerning, 158

Kneeland, John, Agent, Report of, 118
  Services of, account, 118
  Condition of schools, 119
  Supervision of schools, 120
  Improvements in schools desirable, 120
Labor, skilled, demand for, 174
Lieber, Prof., State, definition of, 154

Madison, James, State education, opinion of, 156
Mann, Horace, School for Deaf-Mutes, 59
  Definition of education by, 170
Manual education, elements in, by Pres. J. D. Runkle, of Technological Institute, Boston, 185
  Conditions of, in earlier times, 185
  Separation from mental, begun, 186
  Introduction of, justified, 187
  Building for (plate), 191
  Industrial School, Report of, 1876–7, 193–196
  Report of course in vise-work, by Valentine Wallburg, 196–210
  Class-record on Piece 5, 211
  Course in forging, 212
  Catalogue of forgings, 213
  Designing, 214
  Pattern-weaving, 214
  The foundry, 215
  Introduction of, in Public Schools, 216
Massachusetts, pupils, number of, in asylums, 51
  Constitution concerning education, 159
  Grants for higher education, 160
Metric system, Act of Legislature concerning, 98
  Its teaching recommended, 99
Moral element in teaching, early statute concerning, 100
  Necessity of, 101
  Method of teaching morals, 101

- Norfolk County School-committee Association, meeting of, 70
- Normal Art-School, establishment of, 4
  - Visitors, Report of, 37
  - Education in, its scope, 39
  - Statistics of, 39, 45
  - Aim of, 40
  - Graduates, employment of, 43
  - Building for, needed, 44
- Normal Schools, progress of and improvement in, 3
  - When first established, 85
  - Prussian system of, 85
  - Europe, increase of, in, 87
  - United States, increase of, in, 87
  - Massachusetts schools, number of pupils in, 87
  - Worcester, Salem, and Westfield, results of schools, 88
  - Bridgewater, result of school, 90
  - Framingham, result of school, 91
  - Rev. J. Fraser, English School Commissioner, remarks concerning, 92
  - Demand for teachers from, 93
  - Schools of observation should be added to, 93
  - Framingham, Report of, 13–14
  - Westfield, Report of, 16–19
  - Bridgewater, Report of, 20–24
  - Salem, Report of, 25–28
  - Worcester, Report of, 29–34

- Principles of teaching, present results not satisfactory, 74
  - Practical knowledge, what, 76
  - Amount taught in schools, 76
  - First principle, what, 77
  - Second principle, what, 78
  - Third principle, what, 78
  - Uniformity in, desirable, 79
- Private Schools, State supervision of, needed, 7
- Prussian Normal Schools, system of, 85

- Report of Board of Education, 3
  - Framingham Normal School, 13
  - Westfield Normal School, 16
  - Bridgewater Normal School, 20
  - Salem Normal School, 25
  - Worcester Normal School, 29
  - Boston Normal Art-School, 37
  - Secretary of the Board, 47
  - American Asylum, Hartford, 52
  - Clarke Institution, Northampton, 55
  - Horace Mann School, Boston, 59
  - George A. Walton, Agent, 104
  - E. A. Hubbard, Agent, 112
  - John Kneeland, Agent, 118
  - Treasurer of the Board, 123
  - Valentine Wallburg, Technological Institute, 196
- Runkle, John D., President, manual element in education, Report on, 185–218
  - Industrial School Association, 219

- Salem Normal School, Report of Visitors, 25
  - Improvement in, 25

Statistics of, ... 25–27
Apparatus needed, ... 28
School Committees, duties of, ... 64
Qualifications for, ... 65
How to examine teachers, ... 65
Insufficient examination by, ... 66
Should establish course of study, ... 66
School Fund, Massachusetts, condition of, ... 62
History of, ... 62
School system, good, four conditions necessary to, ... 61
School supervision, ... 66
Present mode of, ... 64
Cousin on system in the Netherlands, ... 67
Hon. S. Galloway, Ohio, Remarks on, ... 65, 67
Necessary in an economic sense, ... 67
Necessary for best results, ... 68
Proposed for Massachusetts, ... 68
Secretary of Board of Education, Report of, ... 47
White, Joseph, Hon., resignation as, ... 8
Dickinson, John W., election as, ... 8
Summary of statistics, ... 49

Teachers' Institutes, number held, ... 7
Attendance at, ... 7, 95
Success of, ... 7
Where held in 1877, ... 94
Interest in, ... 94
How conducted, ... 94
Exercises of, ... 95
Lecturers and teachers assisting at, ... 96
Technical schools, importance of, ... 4
Legislation for, deficient, ... 4
German, superiority of, ... 6
Technology, Institute of, President Runkle's report on manual education, . . 185
Towns, small, educational disadvantages of, ... 7
Treasurer of Board, Report of, ... 123

Walton, George A., Agent, Report of, ... 104
Account of services. 104
Schools, condition of, ... 105
Methods of teaching criticised, ... 105
Schools, improved spirit in, ... 107
Higher ends striven for, ... 108
Institutes attended, ... 108
How conducted, ... 109
School-committee meetings attended, ... 111
Their objects stated, ... 111
Westfield Normal School, Visitors, Report of, ... 13
Statistics of, ... 13
Lectures delivered, ... 14
Library, additions to, ... 14
"Model school" connected with, ... 14
White, Hon. Joseph, resignation as Secretary, ... 8
Worcester Normal School, Visitors, Report of, ... 29
Progress of, ... 29
Apprenticeship to teaching desirable, ... 30
Preparation for teaching, ... 30

  Observation of teaching, 31
  Practice in teaching, 31
  Results of apprenticeship, 34
  Lectures delivered to, 33
  Statistics of, 34
Worcester County School-committee Association, meeting of, 70
Worcester Free Institute, 173
  School of Technology, what, 173
  Skilled labor, demand for, 174
  Conditions of admission to, 175
  Mechanical department, practice in, 175
  Statistics of, 183